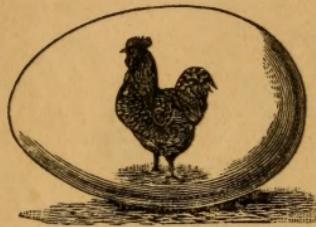


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—OR—

HOW I MANAGE MY POULTRY



The General Management of Poultry, with Instructions for Building Poultry Houses and Incubators, to Preserve Eggs, Cure Cholera, &c.

1,000 THINGS FOR THE POULTRY YARD!

C. G. BESSEY, ABILENE, KANSAS.

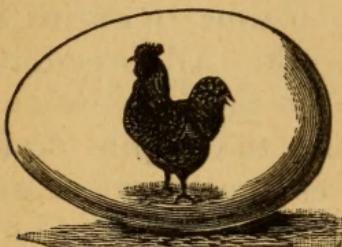
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PREFACE.

Jlay no claims to entire originality in this work. All breeders meet with much the same experience, and it has been my aim to compile from all reliable sources, a concise treatise giving instructions to beginners. I would express my indebtedness for valuable hints especially to the "Poultry World," "Poultry Nation," and also "Wright's Illustrated Book of Poultry."

C. G. BESSEY.



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The Poultry Yard.

The majority of farmers do not have much use for yards unless it be to keep their breeding pens separate from each other, but to the person living in village or city, the yard is the first consideration. It should be located if possible on a high gravelly spot; a yard sloping to the south or south-east is preferable. It should be as large as circumstances will admit, the larger the better. The one that I am using contains about $\frac{1}{2}$ of an acre, divided into 10 departments, and with proper management will accommodate from 100 to 400 fowls.

A very cheap fence for poultry can be made out of a good quality of plastering lath, with a six or eight inch board at bottom and top, after the lath are nailed on, nail a one inch square cleat on the posts, let them extend about fifteen inches above the top of the lath, then stretch three strands of fine broom wire around on top of the fence fastening it to the cleats, the first wire five inches above the top of the lath, the second ten inches, and the third fifteen inches. This fence will turn almost any variety of fowls.

The Poultry House.

The poultry house should be roomy, the larger the better. It is not necessary to build expensive houses, but they should be warm. Where parties can afford it, it is well to have them lathed and plastered, but where a cheaper one is desired, it can be boarded up and down cracks, well cleated and lined with tar paper. A very cheap house can be built without any sides, the shape of the letter A, only more flat. The roofs commencing at the ground on both sides, and raising to an elevation of about $7\frac{1}{2}$ feet in the center, can be built of rough lumber any width, but should be about fourteen feet long. It should be covered with tar paper and have plenty of windows to let in the sun, a door at each end, a hall 3 feet wide running from end to end, made of plastering lath; this will leave ten feet on either side which can be divided to suit circumstances. This plan gives the most room for the least amount of money of any house ever built, and is also very warm, but a house with walls is more pleasant to work in. A great many farmers have sheds, stables or small buildings about the premises that, with a little work, several feet of lumber, a window or two and some tar paper would make a very good poultry house.

My house is 18x25, and 8 feet to the ceiling, boarded up and down, cracks cleated and lined with tar paper, four windows to the south and one to the east, ground floor; divided into four rooms.

My roosts are built of 2x2 scantling, about eight-

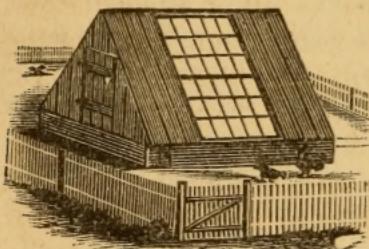
teen inches apart, all on a level with each other and three feet from the ground. Eighteen inches below the roosts I put in a floor to catch the droppings on; the roosts and floor are built on one side of the room, so that I can get on three sides. They are fastened at the one end to the wall, and in front to scantling running from the floor to the ceiling. This floor will catch the droppings, and the fowls will have as much ground room as though there were no roosts, and the house can be kept much cleaner than without the extra floor. Some poultry men think that a house is not complete without a hatching room; for my part I prefer to have a hen hatch in the laying nest, I think she will do it more satisfactory than it moved. For nest boxes I use small goods and tobacco boxes. Set on shelves or fastened to the wall around the outside of the room, they should be at least eighteen inches above the floor or ground, and not higher than five feet. I prefer to have them arranged somewhat promiscuously, so that hens when hatching can the more readily distinguish their own nest from others. There should be a good supply of nests, as a general thing where there are plenty of nests pretty close together when a hen commences to hatch, others that may be laying in the same nest will go to the next nest. A sod turned upside down in a nest box with clean wheat straw makes about the best nest. This should be renewed when the hen is set, and sprinkled with fine tobacco and sulphur, to prevent vermin. No poultry house is complete for winter use without a good supply of windows to let in sun-

shine, and a number of dust boxes. I prefer road dust, sifted coal ashes, with a little sprinkling of wood ashes and sulphur.

Cheap Poultry Houses.

(From "Farm and Garden.")

The first, which is a single and separate building, combines cheapness and warmth. It may be built of any size desired, but the favorite dimensions are ten feet square, and eight feet high, the house being a roof (seven feet) resting upon a foot

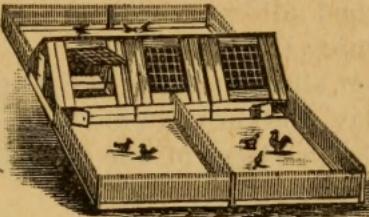


board. On the south side should be a large window, or two smaller ones, for the admission of light, and heat on clear days. The door is at either end preferred

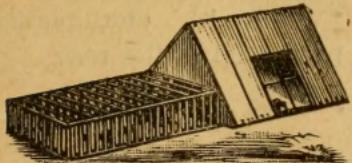
and a lath partition inside will divide the house into two separate apartments. For cheapness the yards may be made of lath. The cost of such a building in material, is the price of about 400 feet of lumber (boards and studding included) but the labor is extra.

The arrangement shown for three such houses, with two yards in front and one in the rear, is given in order to illustrate economy of space. It is well known that the nearer we make the yards to the square shape the greater space for the fencing used. The two end portions of the building have yards to them extending toward the front, while

the centre portion has attached the yard leading to the rear. The rear yard takes exactly one-third of the entire square enclosure while the two-thirds in front is divided lengthwise for the end apartments. By thus combining a building for the accommodation of three breeds the cost of lumber for the ends necessary for single buildings may be saved by the substitution of lath partitions inside, while the sashes of the windows are nicely inclined to collect heat and light, at the same time serving the purposes of a roof.



A small coop for the confinement of a hen with her brood can be made cheaply, and yet have a pane of glass for light, with a wire or lath run attached.



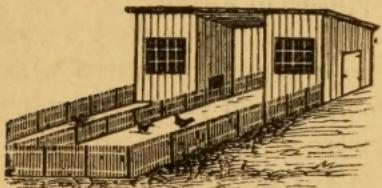
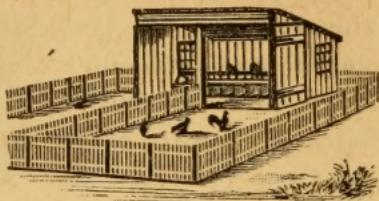
It can be made with or without a board bottom, and should be easily removable from place to place. If the boards are

preferred to form a bottom they should be cleaned daily, and sprinkled with sand or road dirt. In cold, wet weather, a good dry floor will be of the greatest advantage.

The combined house and shed has two yards, which we give simply to illustrate the advantage of double yards. While the fowls may safely and se-

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curely roost in the closed part at night the open shed allows them to enjoy the open air under shelter during the day, and they can have the privilege of one of the yards while something may be grown in the other. By alternately changing from one yard to the other, whenever necessary, the frequent spading of the recently occupied yard promotes cleanliness, while the small crop of green food lessens the expense of keep and affords material not always convenient by the use of single yards.



The double sheds or houses, which are combined under the same roof, are shown as a method of economy.

Should changeable yards be desired they may be placed at the rear.

My Idea of Poultry Raising.

Is to have some good breed or breeds—strictly first-class birds—a good warm house, feed well so as to induce winter or early laying. 100 good hens and ten good roosters, properly housed and cared for, should have 50 dozen of eggs ready to hatch—either by incubator or natural—by the first day of March or April, from this number one could expect to have at the end of three months 400 chicks, and

from this number could be selected, if the original stock has been first-class, 100 chicks, such as are sold by many of our noted breeders, at from two to five dollars when nine months old. The remaining 300 chicks, if properly cared for, will sell in most of our large cities at three months old for \$3.50 to \$5.00 per dozen. Now there is scarcely a locality where a good breeder with a good reputation, good stock and judicious advertising, will not be able to sell from one to two hundred sittings of eggs at from \$1.00 to \$3.00 per sitting. I aim to keep on hand as breeding stock 100 strictly first-class Plymouth Rock hens and 10 good cocks or cockerels, from this number I have sold this season over 200 settings of eggs and have raised 150 young birds that will sell at from \$2 to \$5 each. The culls that we have used on our own table and have sold in the market will almost pay the feed bill.

• • •

My Bill of Fare for Laying Hens.

Chemically speaking the shell of an egg consists chiefly of carbonate of lime, similar to chalk with a very small quantity of phosphate of lime and animal mucus. The white of an egg—albumen—is composed of eight parts of water; fifteen and a half parts of albumen and four and a half parts of mucus, besides giving traces of soda, benzoin acid sulphurated hydrogen gas. The yolk consists of water, oil, albumen and gelatine. Now hens must have something to form shell; oyster shells head the list, bones of any kind are good and by roasting or burning them until they are brown and brittle

you have almost the genuine egg-shell; lime with gravel and sand is good. Albumen—the white of the egg—is found almost in its pure state in fresh sweet milk, and in wheat, oats, rye and buckwheat—barley and corn in the order named, corn with other grain furnishes oil and gelatine. While at large and during the summer season hens get plenty of seeds, weeds, &c., that furnish a great portion of the items named. The bones and shells they are not apt to get, and they seldom ever can find albumen enough. Now this makes plain what we are to feed.

FOR BREAKFAST.—Take one part meal or cracked corn, one part shorts and one part bran, or one part meal, one part chopped oats and rye and one part bran, mix with milk, or water if in the winter season—the milk or water should be boiling hot. Do not use enough milk or water to make the mess sloppy. Occasionally season with red pepper. One or two mornings during the week instead of the above feed “Buckeye Egg-Food.”

FOR DINNER.—Feed either wheat or wheat screenings, oats, rye, buckwheat or barley. I prefer wheat.

FOR SUPPER.—Feed corn. Parched corn is one of the best feeds for evening and very healthy.

During the winter season they should have occasional feeds of boiled vegetables and meat scraps. If they get too fat feed less corn and more of the other grains. Rather underfeed than overfeed; give fresh water daily, cleansing the drinking vessel every time. Every three or four days give the

"Douglas Mixture" in the water—a gill for every 25 head. If there should be symptoms of disease give every day. This simple preparation is one of the best tonics known; it is alternative as well as tonic, and possesses beside antiseptic properties which makes it a remedy as well as a preventative of disease. Place in your henery two shallow boxes, in one put broken bone and oyster shells, in the other lime, sand and charcoal. Have a good sized dust box filled with road dust or fine sand, sifted coal ashes, and a sprinkling of lime and wood ashes. Now keep your house warm, sunny, well ventilated and clean, and you will have an abundance of eggs and healthy fowls the year round.

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A Model Poultry Yard.

[From the *Western Rural.*]

Summit Lawn Poultry Yards are located in the suburban village of Arlington Heights, twenty-two miles out of Chicago, on the Wisconsin division of the Northwestern Railroad. Here the proprietor, R. B. Mitchell, Esq., has located a beautiful home, and for the last three years has been raising and caring for his favorite fowls. We think that any one visiting these yards will have impressed upon them the idea that Mr. Mitchell has made a careful study of poultry raising, which, with his experience and business habits, enables him to know the precise expense and receipts of his various coops.

In this paper we shall briefly note the summer method of handling, leaving the winter keeping to

a later notice. Summit Lawn Yards are on the very summit of the elevation at Arlington Heights, and embrace some five acres of smooth, rich prairie ground, having numerous patches of vegetation suitable for feeding the fowls.

The large plat of all is the lawn, which is kept closely shaven, and yields a daily feed of tender grass eagerly devoured by the fowls. The vegetables raised, named in order of their relative quantities, are carrots, onions, Russian sunflower and lettuce, all but the last being designed to furnish winter food. The old fowls now on hand number nearly three hundred and fifty, and the young chicks about as many more. The breeds raised by Mr. Mitchell are the white and brown Leghorns, light and dark Brahmans, black, buff and Partridge Cochins, Plymouth Rocks, S. S. Hamburgs, and this season he is adding Houdans. The old birds are confined in thirty-six yards, each yard or pen being in the form of a ridge roof, sloping from the ground on each side to the top, and with vertical ends. They are about sixteen feet long by twelve feet wide, with an elevation of six feet. The pen is made of four large pieces of slat work forming the sides or roof-like shape, each piece being sixteen by four feet, and the two A shaped ends, in one of which is the door of admission, in the other an opening to a small coop about four feet square and five feet high, water-tight, and provided with nests and perches. Only ten or twelve fowls are confined in one of these yards. Each pen is so constructed that it can be easily taken apart and re-

moved to a new location, or by means of one spare one, the fowls can be transferred to new quarters while the ground of the old run is deeply spaded, thus fitting the whole for occupancy anew. Being made of light laths, the whole pen is cheap, while it furnishes plenty of air and sun to the fowls.

Stretched across one side of the roof, Mr. Mitchell has placed a yard wide piece of tar paper to shade a part of the inclosure if the fowls prefer shade; and on the hot afternoon when our visit was made, this shade was very agreeable to them. The lower edge of this strip of paper being a foot from the ground, gave a nice current of air below. These thirty-six yards are so arranged as to form a hollow square, and the boy starting with his barrow of feed and passing round to all the fowls, finds himself at his starting place with no extra steps. Such an arrangement also enables one to see at a glance the entire condition of all the coops and fowls.

The feeding is done from two to six times a day and is exceedingly liberal. Corn, oats, wheat, screenings, cracker dust, oil meal, lard scraps, bran, corn meal, with refuse from the house and offal from the meat market, are all used freely, and the high condition of the fowls, with their activity and excellent health, show how wisely he caters to their appetite. But in another way yet do they show the result of liberal feedings. Mr. Mitchell keeps a perfect egg record; each coop has every egg marked before it is taken out, and when the boy comes out of the coop it is credited with the whole number of eggs gathered in it. This daily record

is then preserved and carried into a book of monthly and yearly record, and thus he can tell just how many eggs he has had laid in any day, week, month or year, and so can tell to a certainty just what food has paid in his egg factory.

From letters he showed us we found he had furnished eggs to satisfied patrons in half the States of our Union; indeed, before our visit we had had the representatives of these yards shown to us in another State.

Mr. Mitchell is well pleased with the egg yield he has had so far, and thinks he has reduced the cost of coops and keeping to the minimum for numbers and breeds kept, and later will be able to show similar cheap winter results. These yards are open to the inspection of all interested visitors any day of the week, except Sunday, and Mr. Mitchell cordially invites calls.

Is There Money in the Business?

Proprietor of Summit Lawn Poultry Yards, R. B. Mitchell, of Arlington Heights, Ill., makes the following report:

During the year 1881 our average number of laying fowls has been two hundred and thirty. The extreme cold winter of 1880 and 1881, and the want of room to properly house our fowls, prevented them from laying as many eggs as they otherwise would have done, could we have given them more commodious quarters. But take the season through we have no cause for complaint, but rather congrat-

ulate ourselves on the success we have met with, as the following statement will show :

Some breeders might be averse to making a public statement of their business, but as yet we can see no impropriety in so doing, and as keeping poultry is a mooted question—whether or not there is any money in it—we deem it advisable to furnish all the information we can on the subject, from actual facts and experience, for the benefit of those who contemplate entering into it. Does it pay to keep fowls? Our two hundred and thirty fowls have in eight months laid twenty-one thousand one hundred and forty-three eggs; we sold, less five hundred we used for setting;

For	\$1,182 20
Fowls sold during the eight months....	152 90

Total cash receipts.....	\$1,285 10
--------------------------	------------

EXPENSES.

Feed of all kinds	\$ 180 00
Boy eight months at \$7 00 per month..	56 00

	\$236 00
--	----------

Leaving us as net cash receipts.....	\$1,049 10
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We now have on hand to be added to this income, two hundred very choice chickens, for which we get from two to four and five dollars each. But to close up the report, we will estimate them at one dollar and fifty cents each, making \$300.00, leaving us a net profit of \$1,349.10 for eight months. Let us ask, who can beat this with a hundred acre farm?

Artificial Incubation.

Most persons are aware that eggs may be quite as successfully hatched by means of artificial heat regularly and constantly applied, as by the hen sitting on them. The hen does nothing for the eggs on which she sits, but protect and occasionally turn them and keep them constantly of about a uniform temperature, which is from 100 to 106 degrees of heat by the common thermometer. This hatching may be done by many other modes of applying the warmth in the same degree and with the same uniformity.

Incubators have been made and used with varying success in this country for about forty years, and in England and France for double that period, but until within the past few years they have never given very satisfactory results.

There are being manufactured in this country at the present time, about thirty different incubators, of this number there are several that are being used to good advantage. I have until quite recently preferred the 'Eureka,' manufactured by J. L. Campbell, West Elizabeth, Pa., but the 'Centennial,' manufactured by A. M. Halsted, Rye, N. Y., seems to take the lead at present.

Jaques Incubator.

For the description of this invention we are indebted to C. R. Jaques, Metuchen, N. J. This is an American invention, and the cheapest apparatus in

the incubator line. The inventor says, the subject of artificial incubation is increasing every year, and knowing that the majority of the people do not feel able to purchase those incubators which are in the market, I conclude to give them at a small cost the benefit of successful experience. I have succeeded in securing a chamber in which I can regulate the temperature and hold it at any degree desired, my claim for it is, that it is the easiest to construct and cheapest to make of any incubator offered to the public. I do not claim that it will hatch as large a percentage of eggs, as those constructed on more scientific principles, yet it will hatch a large percentage if carefully managed.



DIRECTIONS FOR MAKING

JAQUES' INCUBATOR.

In order to make the Incubator herein described you need only the following articles: a sugar barrel, a round tin clothes boiler about twelve inches deep, see Fig. 1, a tin milk pan, see Fig. 2, and a kerosene lamp with a chimney. Have a barrel

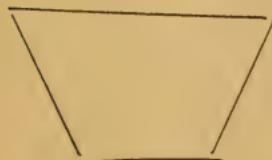


Fig. 1.

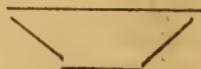


Fig. 2.

without a head place in the boiler, which must be

18 Profitable Poultry Raising.

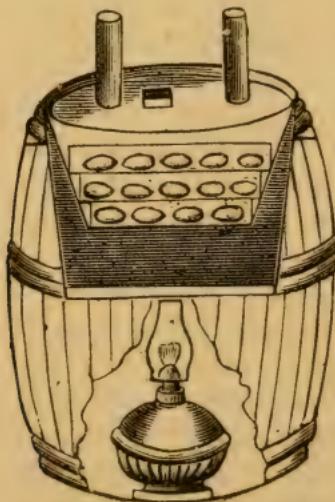
the size of the barrel so it can be supported in its place by its rim resting on the chime of the barrel. The pan must be of such a size, as when it is placed



Fig. 3.

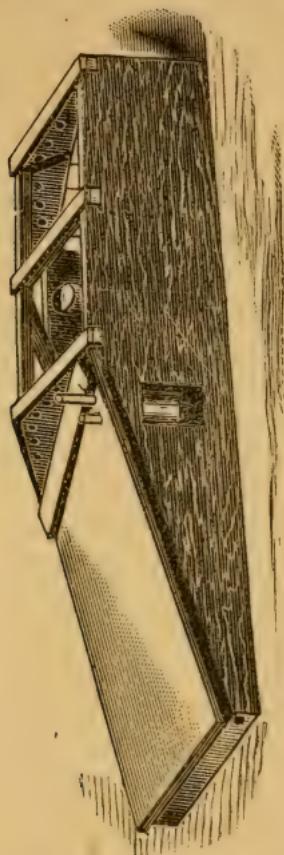
in the boiler (as in Fig. 3) it will have a space of about five inches between it and the bottom of the boiler. It will be necessary to solder the pan in this position. All the space between the pan and the boiler must be filled with water; this can be done by punching a small hole in the side of the pan near the top, and inserting a funnel. It will not be necessary to refill in three weeks, as the evaporation is so slow, you will not lose a quart. Make a door in the side of the barrel near the bottom, of sufficient size to admit the placing of the lamp under the boiler. Cover the outside of the barrel with four or five thicknesses of paper, well pasted on, to secure heat in the barrel. Bore two one-inch holes in the lower part of the barrel, one on each side, with tubes running from them to the base of the burner to the lamp, in order that the lamp may have a supply of oxygen to support the flame. Bore three one-inch holes near the top of the barrel, to allow the gas to escape. The cover must be lined and wadded, so it will fit tight to the

boiler, that the heat cannot escape. Cut a hole in the cover 3x4 inches, paste a piece of glass over it; directly under (which can lie on the upper shelf of eggs), then you ascertain the temperature without removing the cover; also bore two one-inch holes through the cover, insert a tin tube in each for the purpose of ventilating the egg chamber, which is of sufficient depth to allow three layers of eggs; cover the bottom of the pan with a thin layer of cotton, on which place the first layer of eggs, and at equal distance apart around the edge of the pan put three blocks of wood about two inches square, on which place a round sieve with one-half or three-quarter inch meshes; on the top of this put another sieve larger than the first, so the rim of the lower one will support it. Cover the bottoms of the sieves with a piece of a coffee bag or some other light material, so the heat can pass up through it. The tubes to supply the lamp with air can be made by wrapping a piece of hardware paper around a broom handle three times, pasting it together; after the paste becomes dry, slip it off.



Directions for Using the Incubator.

Place the lamp under the boiler, turn on a good flame, when the mercury runs up to 100 reduce the flame so it can just be seen above the cone of the lamp, keep the temperature 103 the first week, 100 the second and 98 the third week. It is very easy to regulate, provided the temperature of the room is not subject to much variation. In case of very cold weather, close the ventilators at night and place a heavy woolen cover over the whole Incubator. As the eggs need a certain amount of moisture, they should be lightly sprinkled with warm water every day, or as often as is needed. A good way to ascertain the amount of heat in the egg chamber is by keeping in a small piece of skin of a salt codfish; this should never be allowed to get so dry as to crack when bending it, nor to be so moist as to become wet, but should always be so that you can easily bend it. After the fifth day examine all the eggs by holding them up to a strong light. If any are perfectly clear, remove them, as they are not fertile, yet they are just as good for culinary purposes. Do not place the eggs in until you have secured and are able to keep the right temperature. I use a large bracket lamp, and do not have to fill it only once in 24 hours. After the sixth day turn the eggs daily, which can be done by removing the sieves; this will give them an opportunity to cool, as in the case of a setting hen off her nest. After the chickens are hatched they remain in the incubator 24 hours, when they should be removed to the artificial mother.



Artificial Mother.

Artificial Mother.

To provide the artificial heat necessary, several devices have been employed—perhaps none better than the artificial mother illustrated above. This may be made of any capacity required. A very convenient size is one that will accommodate fifty chickens until three months old. Two feet wide

and four feet long, the sides are twelve inches high under the glass, sloping to three inches at the back. The cover of the back or inclined part should be movable, and lined with sheepskin or with pieces of flannel cut into strips three inches wide and tacked to the underside of lid so as to hang down lengthwise with the lid. From the highest part of the lid should hang a curtain made of flannel, all across the box, and to within a half inch of the floor. This keeps the cold air out of their roosting place. The front half of the "mother" is covered by four panes of glass. This admits the sun. The black dots in each peak are intended to represent one-inch holes for ventilation.

An ordinary stone gallon jug (placed beneath the lid) filled with hot water four or five times a day, will furnish all the heat necessary. *Feed little and often*, and a variety; for the first two days the yolk of a hard boiled egg, then coarse Indian meal, scalded or baked; occasionally onions, cabbages or meat chopped very fine; after a month old cracked corn or wheat screenings at night.

Hatching by Means of Heat Generated in Manure.

The following ideas are taken from a letter of Mr. Keen, of Philadelphia, to a friend. They will be found very interesting, and his plan of incubating by means of heat generated in manure will be very practical with farmers. What a noble work for the farmer's boys and girls to busy themselves in the beautiful days of spring, taking care of the

thousand chickens any farmer's family may thus raise per year at an expense of but a few days' work of a hand or the farmer, and all the rest done by the little fellows with a richer enjoyment than play.

Mr. Keen says:

"This mode will be more useful to the farmers, as they have the material at hand, and the only cost attending it would be a little labor to accomplish the hatching of eggs to any desired extent.

"This Mammel (to use the Egyptian name) I will give a minute description of, that every farmer may build one for himself and be able to perfect the hatching of eggs and rearing of chickens without the aid of the hen.

"It is a building 13x16 feet with a tight grooved partition dividing it into two apartments, the front one seven feet, the other nine feet. In this partition are two openings to receive the front end of the ovens. These ovens are six and a half feet long, two feet two inches wide, nineteen inches high on one side and eighteen on the other, in the clear; back end closed and made entire of inch boards; lined with tin soldered water tight, with shutters in two equal parts, hung to the bottom and in the middle with hinges, and buttons to close the front end. In the upper part of the shutter are two sliding valves, each four inches by six, to give air and regulate the heat. The outside of the ovens and partitions should be well coated over with pitch to exclude moisture and preserve the wood from decay. The ovens should be placed eighteen inches above the ground, supported with posts at the back end, and

four feet apart, with an open board partition, the boards running up and down, ten inches apart, to divide the dung between the ovens, and yet not entirely separate, so that in renewing the dung of one oven the other may not be chilled. There should be a window in the back to give air and receive the dung through. The dung should be such as is made in a well-littered horse stable, and used, straw and dung mixed, and well watered while being thrown into a pile, where it is to remain twenty-four hours to soak, and admit the redundant water to pass off. It should be placed loose around the ovens which will not require renewing for two weeks; then only renew half the length of the oven at a time, judging from the heat when more of it is to be renewed, which will be required every week. Tan will make a better bed under the oven than dung; the heat will last longer. The egg box four feet long, two feet wide and three inches deep, lined with balze, ten inches of one end covered with wire to keep in the chickens that are just hatched; the other part of the box should have a light frame, with twine placed between the eggs and attached to the frame, to turn all the eggs at one time. The egg box rests on a carriage which runs on rails laid on the bottom of the oven, with a movable attachment, to run the carriage entirely out of the oven. The egg box turns on a center, to reverse the ends in the oven. The carriage is made in two parts; the lower part has sash pulleys let into it, to roll on the rails; the upper part is connected to the lower with four small bars of iron about eight inches long,

with holes for a wood screw in each end, and the screw put into the top and bottom, when they lie together (which moves like a parallel ruler), and confined to different heights by a hook about ten inches long, fast to the upper part, and hooking into staples driven into a piece of wood running along and fastened to the lower part. This arrangement is to sustain the egg box at different heights, to suit the required degree of heat, which I have found to be as near as it can be kept, to *one hundred and four degrees*, from the first to the last stage of successful hatching. My feed room can be made perfectly dark. Through one of the doors is a hole one and one-fourth inch in diameter, over which is a piece of cloth tacked (an inch hole in it) that will exclude all the light except what passes through it, where can be seen the first progress of the chick, and in four days *if there is no appearance of the chicken*, boil it for the young brood.

“ Next in order is the rearing of chickens without the aid of a mother. In the basement of the first named building, on a level with the top of the Eccalobeon, is a platform four feet by seven, with a slide to open in fine weather into a small yard; also one to open into a box with wire front (over the Eccalobeon), which is moderately heated from a small stove; in this box is an artificial mother made of rabbit skins, (I have also one made of the skins of fowls,) hung about two inches from the bottom, where the chicks are first placed; in three or four days they are let into an adjoining apartment, where there is a sheepskin mother; over

this is another, with a sheepskin raised higher at one end than the other, for chickens further advanced to run under, with a small yard attached. In the glass building is a platform sixteen feet by four, about four feet above the ground floor, for chickens still further advanced, with a yard to it. They are next shut out from this apartment and run with the full grown fowls.

"All these apartments will accommodate about five hundred chickens of the different ages. This mode of hatching and rearing them is attended with less than half the loss that usually takes place when hatched and reared by the hen. With regard to the feed for the first two or three meals, I give grated stale wheat bread, laid on a *sanded* floor; next, I give bread boiled in milk, and while hot, mix coarse ground Indian meal with it, making it nearly dry. For the other fowls, I give wheat screenings and whole corn, with once a week boiled meat.

"It will here be seen that I have made the management of eggs as plain and simple as Cap. Cooke did 'when he stood one on its point.' "

Instructions for Constructing the Excelsior Incubator.

Take two boards, each 4 feet long, 6 inches wide and 1 inch thick, and two boards each 2 feet 10 inches long, 6 inches wide and 1 inch thick, and nail the ends together firmly, and you have the sides of a box 4 feet long, 3 feet wide and 6 inches high.

Now cover the top of this box with boards 1

inch thick, plowed and grooved, or matched, so that they will fit closely together. Then for the bottom take a piece of zinc 4 feet long and 3 feet wide and nail securely with two rows of small nails, for the bottom of the box. This makes a box 4 feet long, 3 feet wide and 6 inches high, with a zinc bottom. This box is called the heater.

Next make the egg drawer, by taking two pieces 4 feet long, 4 inches wide and $1\frac{1}{2}$ inches thick, and two pieces $8\frac{1}{2}$ inches long, 5 inches wide and $1\frac{1}{2}$ inches thick, nail these together, making the sides of the egg drawer, 4 feet long and 2 feet $11\frac{1}{2}$ inches wide; then cut 23 slats $35\frac{1}{2}$ inches long and 1 inch square, and nail the 23 slats on the bottom of this drawer 1 inch apart. These slats are the bottom of the egg drawer.

Now this makes a drawer 4 feet long, 2 feet $11\frac{1}{2}$ inches wide and 5 inches high on the outside, and 4 inches deep in the inside, with a slat bottom.

Now take a piece of wool sack, coffee sack, or some other coarse, strong material, 4 feet long, 2 feet 8 inches wide, draw it tightly over the top of these slats and tack to the slats and ends of the drawer.

Now cut out of good timber two slats 3 feet 7 inches long, 1 inch wide and half an inch thick, and two slats 32 inches long and 1 inch square, mortise the ends of the two half inch thick slats into the ends of the inch square slats, making a frame 3 feet 7 inches long and 32 inches wide; take good heavy muslin and draw it VERY TIGHT, especially lengthways over this frame, and tack it on solid, lay this

frame, muslin side down, on the coarse cloth in the egg drawer. On this muslin the eggs are to lie.

Next cut 20 stats 2 feet 11 inches long and half an inch square, then bore 20 holes half an inch in diameter, in each side of the egg drawer, for the 20 slats to go in; these 20 slats should be $1\frac{3}{4}$ inches apart, so the eggs can lie between the slats, and the slats should be down just as close to the frame with the muslin on as can be, to allow the muslin frame to be moved easily between these 20 slats and the slats that make the bottom of the egg drawer, then place the eggs between the 20 half inch slats on the muslin cloth, then, by moving this muslin frame 2 inches back or forward, you turn the eggs half over or bottom side up.

Next take two boards 4 feet long, 8 inches wide and 1 inch thick, and two boards 2 feet and 10 inches long, 8 inches wide and 1 inch thick, nail these together, making the sides of a box 4 feet long, 3 feet wide and 8 inches high, being similar in shape to the heater, except 2 inches higher.

Nail on a bottom of plowed and grooved boards 1 inch thick. Now bore 12 holes in different parts of this bottom, half an inch in diameter, and get 12 pieces of tin pipe, 7 inches long and half an inch in diameter, and put in each of the 12 holes. They should extend up above the bottom 6 inches. These are the ventilators. Now fill this box containing the ventilators with saw dust, brand or sand, about 5 inches deep, or up to within 1 inch of the top of the ventilators. Mind, this box has a bottom but no top. Now set the egg drawer on top of the ven-

tilator box, and then on top of the egg drawer set the heater.

Now we want to arrange these boxes so the egg drawer can be slid out and in, and the other boxes maintain their position. To do this, take two boards, each four feet long, 12 inches wide, 1 inch thick. Nail one of these boards on each side of the heater and the ventilator box, driving the nails into the heater and ventilator, but be sure and drive no nails into the egg drawer, as it should slide out and in freely between the heater and ventilator. Having got these boards nailed solid, cut another board 3 feet long, 12 inches wide and 1 inch thick, and nail to the heater and ventilator, on the back end. Now the heater and ventilator are connected on two sides and one end, of course the other end must be left open for the egg drawer to slide out. The bottom of the Incubator is now protected by the 6 inches of saw dust that is in the ventilator box. We now want to protect the two sides, the back end and the top with 8 inches of saw dust. To do this, take two pieces of scantling 4 feet and four inches long, lay them down and set the Incubator on them, so that the scantling will extend out 8 inches on each side of the Incubator. See that the scantlings do not cover any of the ventilator holes in the bottom of the Incubator.

Now take two boards 4 feet and 8 inches long, 8 inches wide, and lay one on each side of the Incubator on these scantlings for a bottom to the saw-dust box, which will surround the Incubator. Then, by taking a board 4 feet long and 8 inches

wide and laying it across the back end of the Incubator, letting it rest on the ends of the two side bottom boards which extend back, the bottom of the saw dust box will be complete.

Now you want to make one end and two sides of a box to set on this bottom, the sides should be 4 feet 8 inches long and 26 inches high, and at the end 4 feet 8 inches long and 26 inches high. Now set this box on the bottom already made and nail it securely, and with two boards 26 inches long and 8 inches wide you can close up the front end of the box.

Now by taking a board 4 feet long and 8 inches wide, you close the top of the end of the saw dust box. This now makes a box within a box, with a space 8 inches wide between the sides and the back end, which is to be filled with saw dust.

Now go to a tin shop and get two pipes made, take a lamp chimney with you and get the pipes made to suit your chimney, so you can slip the lamp chimney up in the pipe tight. A pipe $2\frac{1}{2}$ inches in diameter is a common size. The pipe should be 12 inches long, then an elbow, then 6 inches more pipe, get two pipes with an L at one end.

Now make a hole the size of your pipe in the outside, or saw dust box 8 inches from the front end and 10 inches from the top, and make a hole the same size in the heater, 8 inches from the front end and 2 inches from the top; then slide the 12 inch part of the pipe through the hole in the saw dust box into the hole in the heater, leaving the elbow and the 6 inch part of the pipe on the outside of the

saw dust box, and 6 inch pipe pointing down, for the lamp chimney to be put in. Then put the other pipe in the same way, in the opposite hind corner. These pipes should be seamed together, as soldering will melt. Then light your lamps and push the chimney as far up in the pipe as you can without making them smoke. If the lamps smoke, lower them a little, that some air may pass around the chimney. Two lamps should keep up the proper heat in the coldest weather.

After putting the pipes in fill the saw dust box with saw dust even full, but right around the tin pipes instead of putting saw dust be sure and put EARTH, as the saw dust might get afire. A little box nailed to the outside of the dust box to cover the tin pipe and elbow, and filled with earth, would save much heat. Now your Incubator has 6 inches of saw dust underneath the eggs in the ventilator box and 8 inches on the top. This makes such a perfect protection that a change of 40 degrees in the temperature of your Incubator room will not make more than two degrees change inside the Incubator. Be sure and get a good thermometer, lay it in the front end of the egg drawer with the top end slightly raised; it should be one inch higher than the bottom end. Let the lower end of the thermometer point toward the back end of the egg drawer, then by pulling out the egg drawer four or five inches you can see in a few seconds how the temperature is. Torches such as are used during political campaigns make good Incubator lamps by putting common lamp burners on them.

Now get six pipes, $\frac{3}{4}$ of an inch in diameter and 15 inches long. Bore six holes in the top of the heater, 3 on each side opposite to where the heating pipes enter the heater. Bore first hole 3 inches from the corner, the second 3 inches from the first and 3 inches from the outside; the third 12 inches from the second and 3 inches from the outside. Then put the other three the same way on the other side. Then put in the pipes and slide them down to within half an inch of the zinc bottom. If the zinc bottom is too loose, bore a hole in the center of the top of the heater, and punch a hole, the size of the bolt you will use, in the zinc directly below, and tighten up the burr until the zinc will not flop up and down any when the drawer is moved. Then by moving the drawer out slowly and steadily, so as not to jar the eggs, the lamp will not trouble. Make the egg drawer so as to slide out smoothly and easily.

This Incubator, as above described, will contain 250 eggs. It should be made 6 feet long and 4 feet wide, the same otherwise, to hold 500 eggs, but remember that two Incubators that hold 250 eggs is much better than one that holds 500 eggs. This Incubator is just as good a one as there is made, for people who do not wish to travel and exhibit their machine, anyone can make it and anyone can use it.

Dust Bath.

By instinct all birds are taught the need of a dust or water bath for their well-being. They

choose a sheltered and sunny spot of fine, dry soil; in which they open their feathers and fill them with dust, which, applied often enough and in sufficient quantities, is death to all parasites which invest the plumage or skin. As the domestic fowl is not a native of a cold climate, it becomes necessary for us to supply the deficiency which exists during our winter season. This is readily accomplished by the dust box, which every one who has fowls should provide. Fine road dust, coal ashes, sand, pulverized loam, or clay even, are all very good, and with a sprinkling of flour of sulphur, constitutes as good a bath as can be desired. This should be placed in a sunny exposure of the room and kept dry and clean, so that the fowls may enjoy its benefits when they choose.

When poultry is kept in a yard, it is best to dig up a small corner occasionally, to let them hunt for worms and beetles, and then sow it in oats and corn and lettuce.

Clipping Wings.

Clipping one wing of fowls to prevent their flying is a necessary operation sometimes, but never necessarily disfiguring. It generally is, however, since the farmer's shears almost always makes a clean sweep of all the quills, and an ugly wing is the result. Besides the ugliness, there are also other disadvantages in such a sweeping operation. A sitting hen uses the outer end of her wing to retain the eggs under her in place, and those near the

body protect the skin being torn by her mate's claws. The proper way is to trim the feathers partly off with a pair of scissors, except about one inch at the end. It shows but little when the wing is closed and does not disfigure the fowl, but lets the wind through, so as to prevent flying.

KEEP a shelter in the yard to protect your birds from the sun and rain.

The Egg.

It is for the most part composed of albuminous matters and oils and fats, together with fibrin, phosphorous, sulphur, iron, etc., in small but appreciable quantities. An egg is a potential chicken. The hatching process adds nothing to the egg, but only develops the chicken from the substance already there. Thus, in an egg there is a material for bones, flesh, brains, nerves, feathers, and all the organs of life. Hence egg production, considered physiologically, is an exhaustive process, when hens lay regularly and constantly. Furthermore, the shells of eggs are composed almost exclusively of carbonate of lime. When a hen lays freely she requires a supply of the raw material from which to secrete this carbonate, and it should be furnished her at all times. Is it any wonder, then, that hens, as they are ordinarily kept, do not lay in winter? Their food must contain the materials from which they secrete eggs, or they cannot lay. Probably nine-tenths of all the poultry in the country is fed

on whole, raw corn. We know that corn contains all the elementary substances that eggs do, but in very much smaller quantities, bulk for bulk, and when a hen has no other food she cannot eat enough to afford the materials for an egg a day, or every other day. She will get fat and lazy but cannot lay. *Hence the necessity for a variety of diet.* In summer, when at liberty, the hens can find the variety of food that suits them, and generally lay well without much care; but in winter they can get only what is given them, and generally they do not lay. But if we know the wants of the hens, and supply them, we may have as many eggs in winter as in summer. Poultry are large consumers of grass when they can get it, and to keep in good health they must have it, or its equivalent, in winter. Cabbage or boiled vegetables of any kind are good substitutes. Grass, if cut green and carefully dried in the shade, when cut fine and steeped awhile in hot water, is nearly as good as green grass, and is eagerly eaten in winter. Besides grass, or its equivalent, we must give a supply of lime. Oyster shells, when they can be had, are the most convenient; when they cannot be had, ordinary stone lime from the kilns will do as well, after it has been slacked, but gravel must be supplied with the latter.



Charcoal and Lime.

These two articles play a very important part in the management of fowls, whether bred in a fan-

cier's yard or on a farm. Charcoal should be liberally fed, for no one thing is more conducive to health than this. It should be broken into small lumps and put where the fowls can get at it, and they will eat it with great relish. We have seen it fed to pigs with the very best results; and those which were treated to it were never troubled with disease or sickness, while neighboring ones were. This helps to prove its value not only for swine but for fowls. Where the birds are kept in confinement, it is a good plan to keep a trough in a sheltered place, full of small bits of fresh charcoal, and the fowls will soon learn to help themselves. The value of lime in the shape of whitewash is well known, and those who use it liberally are the ones who keep their flocks healthy and cleanly. To render whitewash more effective in dislodging, driving away or destroying lice and other parasite nuisances, the addition of a little carbolic acid is invaluable, for scarcely anything else seems so distasteful to the vermin. Air-slacked lime should be occasionally scattered over the floor of the chicken-house to remove unpleasant and unhealthy odors, while a little of it should be scattered around the yard and runs. For material for egg-shells, oyster-shells and lime is the best for this purpose.—*American Stockman.*

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Save None But the Best.

Whatever variety the breeder may cultivate he will find every season among both his old and young

stock specimens that have failed or do not come up to the average points of the rest of the flock, and far below standard requirements, either in plumage, symmetry, size, shape, and many other qualities. This showing year after year seems to be unavoidable where a large number are raised annually, and this is the experience of every breeder with all known breeds. Save none but the best is very expensive, and should be understood clearly, however. And we suggest that while the breeder aims to attaining perfection in the selection and breeding of the very best specimens continuously, he should have for his object the survival of the fittest in his yard, and this can be accomplished by the slaughtering process to good account, inasmuch as the work may be made to pay him fairly by itself, while he is getting rid of the birds which are a drawback to his efforts towards a higher perfection among his selected breeding stock. Now if the fancier in breeding a hundred fowls of any given variety finds but a score of cockerels and pullets which come up to the standard requirements, the other eighty should be culled and sold for consumption. And altogether this may appear a large proportion to be consigned to the block, nevertheless it is best in the end, provided the breeder aims at reputation in the future for raising the best stock birds; for the score selected as breeders and exhibition birds are worth more to him than ten times the nominal value of the culls, if he desires to sell them or retain them for himself, and out of these perfect specimens he may the next year produce a

largely increased percentage of superior fowls over the average of the past season.—*Poultry Journal.*

Poultry on the Farm.

Farming is made up of many home industries, and to neglect poultry as one of the sources of income is poor economy. At certain seasons, when most of the other farm products are disposed of, eggs and early broilers in the spring, summer, and roasters in the fall, are in the aggregate quite an item, and may furnish all the supplies needed. We have always maintained that the farming class have facilities and advantages over the ordinary village poult erer in the way of range and keeping them cheaply at all seasons of the year. It costs very little to keep a flock of fowls on the farm. They usually provide the greater share of their own living from the stable, the orchard, the stubble field and the straw stack. The grain and seed which they pick up, if left unmolested, would be of no earthly use to the farmer, and the worms, grubs and insects which they destroy would injure his growing crops, vines, fruit trees, etc.

Poultry Raising as a Business.

There is just now much interest in poultry raising, and a disposition to take it up on a large scale. The following extract from one of our recent letters will give an idea of the many inquiries made of us; “Is poultry raising a profitable busi-

ness, and would you advise a young man to invest one thousand dollars in it?" This might be answered in brief: Poultry is profitable, but we would not advise a young man (nor an old one) to at once invest one thousand dollars in it. Farmers find the poultry yard the most profitable part of the farm, in proportion to the capital invested. Many reckon in this way: If fifty fowls are profitable, five hundred will be ten times as profitable. This is an instance in which figures do not tell the truth. As soon as the number of fowls is doubled, troubles are quadrupled. A range and houses which will keep fifty in perfect health will be overcrowded with one hundred, and all the troubles due to a dense population will follow. While we believe that poultry keeping on a large scale may be made profitable, capital to purchase birds and build houses is not the only thing needful. Those who undertake the business must give their whole time and attention to it. One point is settled—fowls cannot be kept together in large numbers and thrive. The whole matter requires careful study and experiment. The beginner should start in a small way and increase as success seems to warrant it.

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Eggs and Chicks.

Eggs should be regularly collected every day. The wide-awake fancier can often learn to distinguish the eggs of individual hens, and when this is possible it is very desirable. Thereby, when it is desired to set a hen, the eggs can be retained only

from the finest hens or those that are the best layers. Hens of the laying breed will lay 150 to 250 eggs per annum; common hens average about 100 eggs per head. Every nest must always have a nest egg (white china is the best), as it prevents the hens from laying away. Hard-shell eggs are always preferable, and hence it must be seen that the hens have constant access to shell-forming material. It is not best to give them this in the form of broken egg shells, as they may from that acquire the unprofitable habit of eating their own eggs. The cure recommended, if the habit is detected early, is to place in the nest an egg shell fille : with the strongest mustard, mixed rather thick. We often have inquiries as to whether eggs for hatching can be sent safely by express for long distances. We answer, unhesitatingly, Yes! We have sent eggs hundreds of miles by express, and had 11 and 13 to hatch out of a clutch (13). And again, we have sent eggs equally as far and *had none to hatch*; then the purchaser, if he is a novice, is apt to think himself swindled, and write a very ungentlemanly letter. There is, of course, always some risk in transportation, but there are many other reasons why the eggs will sometimes fail to hatch, whether sent by express or set at home. When eggs are ordered from a distance a setting hen should be in readiness to receive them as soon as they arrive. If none of the hens are ready a brood hen can always be bought at a low figure from some neighboring farmer, or "swapped" for a laying hen. To make the hen take to her new nest she should be changed

at night, and it should be as nearly as possible like the old nest. She should first be given some china eggs until she settles down quietly to incubation. The period of incubation is twenty-one days. Right here we might say that to preserve the eggs for family use, the best plan recommended in *Wright's Poultry Book* is to pack them closely together and keep tightly covered up in a mixture prepared as follows:

"To four gallons of boiling water add half a peck of new lime, stirring it some little time. When cold, remove any hard lumps by a coarse sieve, add ten ounces of salt and three ounces of cream of tartar, and mix the whole strongly. The mixture is then to be let stand to temper, for a fortnight, before use. Thus treated, if put in when newly laid, at nine months after they will eat quite as good as though only laid six days, though, of course not quite like *new* laid."

Hens should be set in the evening, and should be furnished with comfortable nests in a dark and unmolested spot. The nest should be made flat (when very concave the eggs do not lay so well), and is best made out of an inverted sod, or three layers of dry earth or ashes, with straw, hay, or forest leaves placed thereon. Thirteen eggs are the best number covered by average hens. But in cold weather eleven, or even nine or seven—according to the size of the hens and eggs—are amply sufficient. A larger number would only become chilled. The hen should be taken off the nest (if she does not go off of her own accord) for food, water, brief

exercise and a good dusting. Do not, as a rule, remove the young chickens until twenty-four hours after all are hatched. Occasionally one may need some assistance to get from the shell. This should be given cautiously, and only in extreme cases, by gently indenting the finger into the shell (without touching the inside membrane), in a circle from where it is clipped. When the chicks are hatched the mother should be placed in a coop about two or three feet square, placed on the ground and with slats in the front, through which the chicks can run out and receive food. Young chicks should always be kept dry and where they can get plenty of sunlight. It must be remembered that fowls attain their growth in from four to eight months, and can never make up for any "back-sets" in that period. Feed regularly and often until five or six weeks old, at first with cooked meat and hard-boiled eggs mixed. Give fine-chopped green food, and let them have the benefit of a grass run. The floor of the chickens' coop should always be kept clean and free from vermin by a fresh supply of dry dirt. Chicks should always be kept growing while young. If intended for marketing they should be forced and marketed early; spring chickens pay the best by all odds. For breeders, however, it is not necessary to hatch the chicks too early, as those hatched in milder weather require less care, grow better, and are fully as profitable. Asiatics, however, intended for fall shows, should be hatched by the first of March. April, May and June, however, are the best months for hatching fowls intended for

breeders. After the first few days a bit of meat can be chopped with the food once a day. Soft food should be fed fresh very often—only so much each time as is entirely consumed. A little bone meal should be added to the food. After the chicks are two or three weeks old the evening meal can consist of cracked corn and wheat, or good screenings. Chicks should always have a grass run; if deprived of this green food must be furnished to them daily. Chopped cabbage leaves are highly relished by them. A plentiful supply of pure, fresh water must be constantly at hand. In winter the chicks require more stimulating food than in summer. Beef scraps can be boiled and mixed with the soft food. If the chicks have been liberally fed they will be in prime condition for the table without any extra fattening. Growing chicks must always have plenty of exercise, and should not be crowded together in too close quarters. In raising fowls for market, as a rule, the chicks should be killed as soon as ready, certainly as soon as they have attained full size, as then better prices are generally procured than later in the season. The food afterwards fed is, therefore, worse than wasted. Besides this, there is considerable risk from disease in holding a large lot of poultry. In breeding fancy fowls the young chicks that turn out inferior, "culls" or "scrubs," as commonly called (and alas! even the best strains will sometimes throw these despised and ought-to-be-rejected specimens), should be marked as soon as distinguishable, at from three to six months old: Don't be afraid to kill your poor chickens; it is the

only way to ultimate success. If all are killed this year there will be fewer next year.

Havanna Method of Preserving Eggs.

Put into a barrel 24 gallons of water, 12 pounds unslack'd white lime, 4 pounds of salt, let settle until clear, then draw off 20 gallons of the clear liquid. Then take 5 ounces of baking soda, 5 ounces of borax, 1 ounce of alum, 1 ounce tartar, pulverize, mix and dissolve in one gallon of boiling water and pour it into your 20 gallons of liquid; put the liquid into a whisky barrel or coal oil barrel which has been previously burned out. This will hold 150 dozen eggs. Let the water stand about one inch over the eggs, then spread an old cloth on top of the eggs and put a bucket or two of the lime settlings on it. Do not let the cloth hang over the edge of the barrel. After being in the liquid 30 days, the eggs may be taken out and piled in boxes in a dark room or packed ready for shipping—but it is customary to let the eggs remain in the liquid until ready to ship. Do not use the pickle but once. You can put in a few dozen at a time, but always keep the eggs covered with the liquid; as the water evaporates put in more. Put in none but fresh eggs. A dry cellar is the best place to pack eggs.

The Haws Egg Compound.

Use clean barrels or tank, free from all smell. Dissolve 5 pounds of salt, 15 pounds of unslack'd

lime, 1 pound of cream of tartar, 1 ounce saltpeter, 4 ounces of soda, and 4 ounces of borax, mix in 16 gallons of water. Let it stand two or three days, stirring frequently. Drop the eggs in carefully with a ladle, until the brine is full. Do not move the barrel after the eggs are in. Cover the barrel and keep in a cellar or cool place. If the brine evaporates add lime water. Do not allow eggs to remain out of brine.

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To Preserve Eggs.

Place the eggs in a close box, burn some sulphur in the box and shut it up tight. Let it remain closed half an hour, then put the eggs away dry. They will keep for six or eight months. This is the celebrated ozone (!) process. To preserve fruits or vegetables, put a jar of water in the box with the fruit. Burn sulphur, close tightly, let remain closed for half an hour, then put the fruit in the jar of water, cover with a piece of paper and stow away. To preserve meat, omit water. Take it out of box and hang up dry. It will keep months. So will fish. No taste of sulphur affects it, as cooking liberates it, it being a gas in this form.

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Keep the Chickens Growing.

It is a mistaken policy to stint young fowls of rich food, and plenty of it is what they need; and no danger of overfeeding if they are growing and have their liberty. Old fowls that have their

growth and are shut up, can easily be fed too much, but do not fail to feed the young ones all they will eat. A good feed of whole grain of some kind, just as late in the evening as they can see to eat it, is one of the means of making fine stock. Also give them a plentiful breakfast of soft food early in the morning. Let no food lie on the ground, or anything that will sour; it will be very likely to make the little chicks sick. A few cents' worth of food, given at the proper season to a fine bird, may make several dollars difference in the price when you come to sell. It takes a certain quantity of food to keep up the waste of sustaining animal life; so every ounce of food properly digested, in addition to their actual requirements, goes to increase the fowl. Remember this, and never neglect the growing stock. Time lost here can never be regained. Neglect the little chicks and you will surely see the effects of the neglect in the mature fowl.

Artificial nest eggs may be prepared very simply by breaking a small hole in the round end of an ordinary egg, removing the contents and filling the shell with plaster paris, sufficiently moistened with water as to be easily poured into the shell; after it hardens paste a piece of white paper over the hole, or the hens will peck out the plaster paris and destroy the egg. It is easily made, and will last a long time. It is advisable to always have such nest eggs, and fowls will not acquire the habit of eating their eggs; hens are also less liable to wander off and hide their nests when plenty of nest eggs are placed in the nests.

Egg Production in America.

Although these United States are so rich in grain, mineral, lumber and the different commercial productions, the first among which may be placed the raising of cattle, etc., yet they are obliged to send to Europe for a part of the necessary quantity of eggs to meet the demand, a thing almost impossible to believe, yet it is unfortunately but too true, I could hardly believe it, until I had received it from the Hon. Ed. Younds, Chief of the Bureau of the Government Statistics at Washington—several reports of which, unfortunately, are too sparsely scattered through the States—and one of these reports shows me that there was imported into the United States during a period of eleven months in 1872, 5,025,958 dozens of eggs, worth \$688,796, and during the same time in 1873, 5,467,-264 dozens, and worth \$732,234. The increase is again repeated in previous years, not necessary to enumerate, for it would make these statistics wearisome.

So it can easily be seen that there is no danger of overstocking the markets, and I firmly believe that the consumers would rather have their eggs fresh than coming from Europe, as the voyage would not improve their flavor. After having read these figures, that so lucrative a business is not more generally followed and better managed; why poultry does not take its place among other industries and occupy that rank which it ought to among other commercial affairs is, that the thing is too simple;

and if I was to tell a father with two sons to teach them a trade of some sort, he would very likely reply that they may be doctors or lawyers. If I was to ask him the question : "Have you any fortune, or have your sons any disposition for those professions? he would reply: "Not much; and I do not know if they are so inclined." And suppose I had added the advice: "Have them taught the art of raising poultry," I should make that man my enemy, and he might ask me if I took him for a madman. Don't get angry, my friend, I might justly say, for it is not every one who can raise poultry with profit.

Plymouth Rocks.

Among the many fine breeds of domestic fowls raised now-a-days by poultrymen generally, the Plymouth Rocks appear to hold a very prominent position. This fowl is comparatively new, having originated by crossing the Dominique cock with Black Java hens, and keeping on breeding the progeny of this cross until uniformity was secured; the color, hardiness, and other good qualities of the former being preserved with the important addition of an increase in size. The Plymouth Rocks are yearly becoming more popular as their merits become known, the demand keeping pace with the supply. They are a good sized fowl, dress well, and fill a void between the Asiatics and the smaller breeds. When well bred they are comely, and cannot help but prove attractive to the farmer, mer-

chant, mechanic, and others who do not belong to the fancy. The Plymouth Rocks may be considered a "general purpose breed," well adapted to the practical poult erer as well as the novice. They are very hardy, easily reared, mature early and attain large size. The hens are good layers and an excellent table fowl. In their case, therefore, there is no need of keeping two breeds to obtain a good share of eggs and acceptable broilers and roasters. They are also a clean legged fowl, their combs and wattles of moderate size and not likely to become frozen when Jack Frost puts in an appearance. They are good layers, if provided with comfortable quarters and the proper kind of food. The pullets lay at an early age, on account of rapid development; being early maturing they attain their growth and are ready for market sooner than any other large breed. A nice spring chicken will sell for as much money as a full-grown towl, and in this is one of the chief merits of the Plymouth Rocks.

—*Poultry World.*

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Douglas Mixture.

Take of sulphate of iron (common copperas) 8 ounces, sulphuric acid $\frac{1}{2}$ fluid ounce, put into a bottle or jug one gallon of water, into this put the sulphate of iron. As soon as the iron is dissolved add the acid, and when it is clear the mixture is ready for use. This mixture is to be given in the drinking water every two or three days. A gill for every 25 head. If there are any symptoms of disease it

should be given every day. This is one of the best tonics known to the poultry fraternity.

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Buckeye Egg Cure.

Buckwheat, 8 quarts; Indian corn, well parched, 8 quarts; oil cake, or meal, 8 quarts; oats, well parched, 8 quarts; Egyptian rice corn, or wheat, 8 quarts. Grind all together, then mix the oil cake in and add one pint slackened lime, 1 pint ground bone, 6 tablespoonsfull of common salt, 5 tablespoonsful capsicum. Put all the above ingredients together and thoroughly mix. This will make about two bushels of feed after being ground. Cook as much of this feed as your fowls will eat at one time, and feed it in the morning, warm. Do not put in too much water that the feed will be sloppy, but have it dry enough that when thrown down it will not break apart. Feed this food two or three times a week, and not oftener, for remember the feed is very strong.

Atlantic Egg Food and Condition Powder.

Take 4 pounds ground dry meat; 2 pounds ground bone, 1 pound oyster shells, one-half pound of salt, one-half pound of ground cinnamon, ginger, or black pepper (any kind of spice will answer). Mix the above thoroughly. Now mix in a separate dish one ounce each of sulphur, copperas, bread soda, saltpetre, ground saffron, asafetida and hypo-sulphite of soda. When these are well mixed add

to the above, well mixing the whole. Now parch 2 pounds of ground oats and 2 pounds cracked corn, mix, and add to the above. You will then have about 15 pounds of poultry food, at a cost of about 50 cents. If the fowls are in good health the saffron and asafoetida may be omitted. Feed a tablespoonful daily to each fowl.

Young Turkeys.

The best preventive for sickness in these birds, as well as to help them through the red, is to mix finely cut onions or chives in their food, which ought to consist of Indian meal mixed with either water or milk, but small potatoes boiled and mashed with plenty of pepper may be used with raw onions chopped fine instead.

To Insure Success, Observe the Following Rules.

Keep your fowl houses clean and well ventilated, but do not allow any draft to strike your roosting places.

Feed little and often of sound grain; give your fowls a variety of food during the day; at night always feed whole corn.

Have your drinking vessels washed every morning, and keep them full of clean water every day; in winter, give warm water; in summer, give a fresh supply two or three times a day.

Always keep a box of crushed oyster shells where the fowls can get at it.

Never trust your birds to the care of another, no one but the owner can appreciate their wants and attend to the little details, which are all important.

Always separate the sick fowls from the well ones, as most of the diseases of fowls are contagious.

Use kerosene oil freely on the roosting perches once a week—this prevents the accumulation of lice in the poultry house, and the fumes of the oil permeates the feathers of the fowls at night and drives the vermin from their bodies. Whitewash the interior of the coop every three months or oftener. The following receipt for making a wash is the best I have seen: To a pail of whitewash add one pint of crude carbolic acid; make a starch of a pound of flour and mix while it is hot; apply this freely to every part of the house. For outside work omit the carbolic acid and add a teaspoonful of salt and a pound of rice boiled in two quarts of water.

Permit all your hens, so inclined, to sit and hatch one brood in the year. It is better for the fowls, and you will thus get just as many eggs from them in twelve months as if you bothered your brains “to break them up.”

Keep but one kind at first of whatever kind you may fancy. When you can breed that well, try something else, if you get tired of this. But don’t venture upon too much in the “variety line,” at the commencement, or you will fail with all.

Don’t attempt to raise five hundred birds within limits fitting the needs of five dozen or less. Crowding fowls into close quarters will breed thousands of lice, but precious few chickens, remember.

Dont't try to breed too many varieties at once. You will succeed better with one or two in the beginning.

The best plan for all breeders is to raise chickens every season to be layers of the next year, and kill off all the old stock.

Rats are great enemies to chickens, and often they have their seasons of carnage and destruction before they are found out.

The poult erer who expects to make profits on the poultry he habitually neglects, has expectations that will never be realized.

It is well to introduce fresh cocks of pure blood in the breeding pen every second year. This prevents deterioration in the stock. A two-year-old cock with pullet and vi e versa.

No o.le kind of food will make hens lay well. A judicious rotation of the best kinds of food, accompanied with the requisite concomitants and calcerous matter.

A little ingenuity and skill, at a comparative trifling expense, make comfortable quarters for fowls out of the various erections which are to be found connected with the farm and suburban home.

Carelessness.

Carelessness in the little details necessary to good management will show in the condition, health and productiveness of the fowls. The more care and attention to their daily wants the better their appearance and health, and the more cleanly they

are kept in well lighted and well ventilated houses, and the more uniformly they are fed and watered, the better returns they will give their keepers. Remember, this course of treatment always brings the best results, not alone in raising poultry, but any kind of domestic animals. The inexperienced novice is too apt to think that any kind of care or food will do in raising poultry, and when cold weather sets in he allows his fowls to forage for themselves anywhere and everywhere, neglects to provide suitable shelter and proper food when the season and necessities to their comfort and well-being demand them. Poultry requires good food and good care to be productive, and without productiveness there is no profit.

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Kerosene as a Curative.

We have seen, recently, testimonials from so many quarters, as well South as North, as to the efficacy of kerosene oil in chicken cholera, as to inspire a hope that an unfailing remedy has at last been found for this hitherto most desolating disease. A Woodville, Mass., correspondent of the New Orleans *Home Journal* says: "I tried all the remedies mentioned in your paper for cholera, but none seemed to do any permanent good until I tried coal (kerosene) oil; this has effectually arrested the disease, and I am satisfied it is a good thing." In addition to this the editor of the *Journal* says: "We had a pullet which was actually on its last legs, not being able or willing to feed any more. Our better half took some grist and mixed a sufficiency of

kerosene with it to make into pills and crammed some of it down the throat of the fowl. The effect was almost instantaneous, as, at the next feeding time, it appeared with the other fowls and participated in the meal, and since then has been constantly improving. We now feed corn mixed in kerosene oil three times a week, and since adopting this mode have had no cases of cholera.

A correspondent writing to the *Country Gentleman* from Habersham county, Ga., says: "I have found kerosene oil a cure for chicken cholera. Last year I lost my entire flock. This year, by soaking my corn in kerosene, but one has died, although several have been sick.

Cholera Cure.

As soon as symptoms of cholera appear clean up your poultry houses and completely shower the floor from a watering can with one-half per cent. solution of sulphuric acid, and the yard so far as practicable treat in the same way. Feed nothing but cooked food—very sparingly. Use the Douglas mixture in the drink freely. Remove the fowls that are diseased to a warm dry room. Take blue mass and cayenne pepper, each one ounce, camphor gum half ounce, and a teaspoonful of laudanum; mix well and make into pills of ordinary size. Give one pill every hour until purging ceases. Then take two ounces each of alum, resin, copperas, lacsulphur and cayenne pepper, pulverize and mix. Feed three tablespoonsful of the powder with one quart

of boiled or soft feed. This powder may also be fed as a preventative once or twice a week.

To Cure Chicken Cholera.

Place a saucer of water in a close box, burn some sulphur in the box, shut tightly, and at the end of half an hour open the box, take out the water and dissolve hyposulphite of soda in the water until it dissolves no more. Let settle, pour off the clear water, and give the sick fowl a teaspoonful three times a day, pouring it down the throat. Do not compound *hyposulphite* with *sulphite* or *sulphate* of soda.

Cholera.

Investigations of the cause and nature of chicken cholera, made by the Department of Agriculture at Washington, have not been without good results. From experiments made it has been found that the germs of this disease are taken into the body with the food and drink, and seldom ever with the air inspired; that the ground on which diseased fowls are kept becomes infected with the virus from excrements of the fowls; also, that one-half per cent. solution of sulphuric acid will destroy the germs. These are not the only facts brought out by these investigations, but they are enough, if intelligently acted upon, to make poultry raising a much safer business than it has been of late years.

If their highest happiness is to "scratch," and

it is thought best that they be indulged in this, turn them into the field or even the vegetable or flower garden, where they can have fresh ground in which to amuse themselves, but never let them range and scratch and eat on the same ground.

The almost universal practice is to throw the food for the poultry on the ground. In this way the fowls take up more or less dirt, if present, the germs of the disease. As a preventative of the introduction or spread of the disease in this way, the fowls should always have their food and water supplied them from clean vessels. Every dry grain, as corn or wheat, should be given them in small boxes or troughs, from which they can pick the feed but cannot tramp it with their soiled feet.

The other point of interest and to be remembered is that if the disease makes its appearance it may be checked and finally banished by the use of sulphuric acid. The floor of the poultry house, after being cleaned, should be well showered with the solution from the nose of a watering can, and the yard, so far as practical, treated in the same way. Sulphate of iron copperas is also a deadly poison to these germs, and is safer to handle than the sulphuric acid. One pint of dry copperas dissolved in two gallons of water will be found strong enough, and I am not sure but a solution of less strength wou'd answer as well.

Cure for Cholera.

A Kentucky farmer cures fowl cholera by boil-

ing a bushel of smartweed in ten gallons of water down to three gallons, and mixing the decoction with their food twice a day, for three days, then every other day for a week.

Lice.

To guard against the encroachment of lice and other like vermin, the walls of the shed should be regularly washed every year with a strong lime-wash, containing a pound of sulphate of iron to every three gallons, applied hot from the slacking. A thorough syringing either with parafine or a solution of carbolic acid will also be efficacious in getting rid of the annoyance. Carbolic acid is certain death to all insects, and is an invaluable aid to the resources of the poultry keeper.

Experience proves that the use of dry, sifted coal ashes is an excellent exterminator of these pests. The ashes may be sprinkled over the roots, and a commodious box filled with the material should be provided for the fowls to dust in—a provision of which they seem to take pleasure in availing themselves. In making up nests for hatching, it is advisable to put ashes in the bottom and cover with clean straw. After the chicks make their appearance, the nest should be thoroughly cleaned and the straw and litter destroyed. In localities where coal ashes cannot be easily procured, good dry sand may be substituted, in which carbolic powder or sulphur, or both, has been sprinkled.

It sometimes occurs that, in spite of all the pre-

cautions, the vermin accumulate to such an extent that the house becomes literally alive with them. In such cases a thorough cleaning is necessary. All the hay and straw in the nests should be burnt, the hens driven out and the house closed tightly and fumigated with sulphur. This may be done by putting a pound or so of brimstone in an iron pot and dropping on it a piece of hot iron. Keep the house closed two or three hours, after which it should be well ventilated and swept out thoroughly. The walls, inside and out—in fact, every place that can be reached—should be washed with hot water, in which has been dissolved potash, one pound to every quart of water. Then follow with the kerosene oil. Fresh hay is needed for the nests, and assurance is made doubly sure by whitewashing. This radical treatment is not accomplished without some trouble, but the result amply repays the labor.

Roup.

Probably the amateur, and sometimes even the experienced breeder, turns more anxiously to the treatises on this disease than to any other, for the reason that it is at once the most annoying and destructive of the whole catalogue, though less to be dreaded now than formerly. Nearly all writers agree that roup results from exposure to damp, draughts and confinement in tainted coops. It is highly contagious, the germs of the disease being communicated by drinking or other contact. The symptoms of roup are at first identical with those of

a severe cold; the discharge from the nostril, however, soon loses its transparent character, becoming more or less opaque, with a peculiar and offensive odor; froth appears in the inner corner of the eyes; the lids swell, and sometimes the eye-ball is entirely concealed. In very severe cases the cavity of the nose becomes filled with the diseased secretion, which cannot escape, owing to the small size and closure of the nostril, and then the face swells considerably.

TREATMENT.—In this disease, nearly equal numbers recover, under various modes of treatment, so far as relates to internal remedies. But in *all* cases the bird is at once to be isolated, and the water vessels immediately disinfected. McDougall's Fluid Extract is excellent for this purpose. Warm, dry lodging and stimulating nutritious food are the first essentials to recovery. The eyes and head should be frequently bathed with warm water and remedial agents of some kind applied to the diseased membrane. This is somewhat difficult, on account of the nostrils being closed up, but may be overcome by inserting the point of a small syringe into the slit in the mouth and turning it rather to the outside for each nostril. Labarraque's solution of chlorinated soda is the injection most in use by a number of the best fanciers. Tegetmeier says he has used a few drops of a dilute solution (10 grains to the ounce of water) of sulphate of copper, with very favorable results. This internal treatment is a dose of castor oil, to be followed every morning and evening by a pill of balsam copaiba, 1 oz.; licorice,

in powder, $\frac{1}{2}$ oz.; piperine, 1 drachm, with enough magnesia added to make the mass into sixty doses or pills. A few drops of tincture of iron or McDougall's Fluid Extract should be added to the drinking water.

Excelsior Roup Pills.

Equal parts of ground saffron, asafetida, and hyposulphite of soda, made into small pills the size of a pea, or given in as much powder as will lay on a cent, twice a day to each fowl.

Gapes.

This disease is caused by the windpipe of chickens or young fowls being infested with worms, eventually causing suffocation. How the disease is propagated is a debatable question. The worm is usually found double, of a pale reddish color, and rather less than three-quarters of an inch long.

The number in one chicken usually varies from two to a dozen. Dirt and damp have undoubtedly a predisposing tendency, as it is well known that gapes rarely ever trouble a clean and dry yard.

By many it is supposed that the worm is generated in some manner by lice or a similar parasite which infests the head of young chicks, and as a preventative the following ointment, applied very lightly on the back of the head, on the throat, and under the wings, in a melted or fluid state, at the time of taking chickens from the nest, is said to

remedy the evil: Mercurial ointment, 1 oz.; pure lard, 1 oz.; flour of sulphur, $\frac{1}{2}$ oz.; crude petroleum, 1 oz. It is stated on good authority that chicks anointed in this manner have never had the gapes, while others of the same broods not anointed have been affected. Another method of keeping the chickens free from the parasites that are supposed to produce gapes, is to apply once a week, under the wing and on the breast of the hen, a small quantity of carbolic soap in solution. The effect of the ointment beginning to destroy the parasites, would seem to give color to the theory that gapes are the result of the presence of lice or similar vermin, and would also tally very well with the fact that disease is comparatively unknown in clean, comfortable quarters. A free use of carbolic disinfecting powder is an excellent preventative. The disease may be checked, after it has entered the yard, by using fluid carbonate camphor or lime in the drinking water, and the affected bird made to inhale the vapor of carbolic acid by placing a few drops on a red hot shovel, and holding the bird in the fumes until it is nearly suffocated. This kills the worms, and is an effectual cure.

The worms may be taken from the throat, also, in the following manner: Take a medium soft quill feather, pluck the web from both sides to within a short distance of the tip, and wet with a solution of 20 grains carbolic acid and one ounce of glycerine. Run the feather down the windpipe, give it three or four turns and quickly withdraw. Repeat two or three times with a new feather each time,

The acid paralyzes the worms, and the glycerine sticks them to the feather, and they are thereby drawn out of the trachea. The feathers and all matter drawn from the throat of the fowl should be burnt, in order to prevent the exposure of the rest of the flock to contagion.

Another remedy is to administer a kernel of black pepper to the chick affected, which is said to destroy the worm.

Gapes in Chickens.

In a recent conversation with an experienced chicken raiser, he informed us that he had been very successful in conquering that precarious disease in his young fowls by the application of air slacked lime. As soon as a manifestation of gapes in his fowls appear, he confines his chickens in a box, one at a time, sufficiently large to contain the bird, and places a coarse piece of cotton or linen cloth over the top. Upon this he places the pulverized lime, and taps the screen sufficiently to cause the lime to fall through. This lime dust the fowl inhales and is made to sneeze, and in a short time the cause of the gapes is thrown out in the form of a slimy mass or masses of worms, which has accumulated in the windpipe and smaller air vessels. This remedy he considers superior to any remedy he ever tried, and he seldom fails to affect a permanent cure. He has abjured all those mechanical means by which it is attempted to dislodge the entozona with instruments made of whale-bone,

hog's bristles, horse hair or fine wire, alleging that people are quite as certain to push the gape worm farther down the throat of the fowls as to draw them up.—*Poultry Nation.*

Selecting and Mating of Stock.

In selecting fancy stock, of course the standard must be followed, and only the best and most nearly perfect specimens of their kind retained, *provided they are all suited to each other.* No hen should have the same faults as the cock. If one is faulty in a certain point, the other should be equally good in that particular, so as to counteract the bad impress upon the offspring. Experience with each breed must teach the fancier the best birds to retain for breeding. Often a bird that is not up to the standard, and sometimes even a disqualifid bird, is desirable in the breeding yard, nay, of the highest importance; for instance, in breeding Leghorns, a straight comb hen is inevitable to raise the finest and most erect combs on cockerels. So a spotted-breasted Dark Brahma and Brown Leghorn cock will produce the most beautifully penciled pullets. We remember seeing a communication in one of the poultry journals, by the late Mr. J. W. P. Hovey, in which he stated the case of a friend who ordered a trio of Brahmans, at a high price, *mated for breeding*, from a celebrated English breeder, and who was disgusted at receiving a poor-looking trio of birds, whose equals *in looks*, could have been purchased anywhere at \$2.00 a head. But appearances

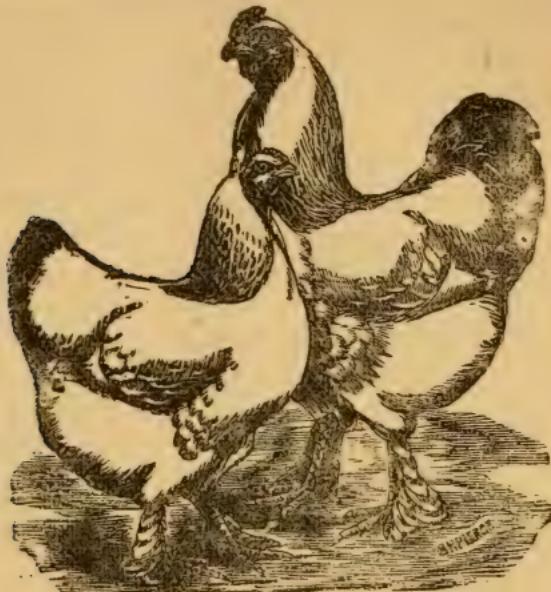
are deceitful, and *blood* will tell, as was proven by the result. From that trio sprung noted prize birds. And so it is, the skillful breeder knows how to mate his birds to produce the best offspring. Amateurs, in starting, make a great mistake in purchasing exhibition birds (as birds *matched* for exhibition are seldom rightly matched for breeding), or in purchasing low-priced birds from unknown sources. The best plan is to send the price of a pair or trio of breeding birds to a responsible breeder, who has a reputation to maintain, and state plainly that you want birds whose *progeny* will speak their praises. In nine cases out of ten you will be satisfied, not only in the birds received, but in the chicks they breed. In mating fowls, it is generally believed the hens effect mostly the size and form, and the cock the plumage and marketings of the chicks. If a choice can be had, it is preferred to mate a cock (over one year old) with spring pullets. Be sure you select a good, vigorous cock, and the one who is the "boss rooster." One cock will readily serve 10 to 15 hens of the larger breeds, and 15 to 20 hens of the small breeds.

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VARIETIES OF FOWLS.

BRAHMAS.

No breed of pure bred poultry, from the days of the hen fever to the present, have so universally maintained a front rank in the estimation of all poultry men as the Brahma. They are quiet in their disposition, and very tame. A three-foot



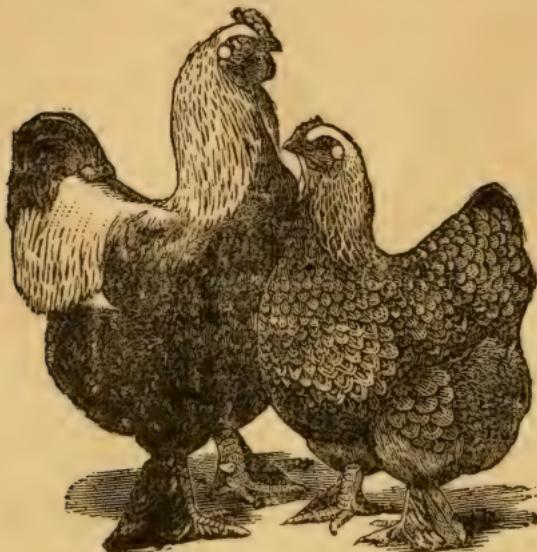
LIGHT BRAHMAS.

fence will confine them, and no breed in the world is so well adapted to close confinement. They thrive well in the smallest quarters. They are excellent winter layers; their eggs are of varied shades. That pure Brahma should lay eggs of one uniform color is an exploded bubble. They are very much inclined to sit, and this is a great drawback. They do not mature early, and are not so desirable for spring market pure bred as when crossed. For mothers, they are the very best, when not too heavy. They have plenty of loose fluff, and will cover a goodly number of eggs. They should be of large size, but no giants. The days of the "long-legged Shanghaes that could eat off the top of a

barrel and all that was in it," is past. Farmers and poulters are beginning to realize that utility of form must be studied. It needs no demonstration to prove that it is highly unprofitable to feed corn and wheat to produce such bony parts as neck and leg. Matured cocks of 12 pounds, and hens of 10 pounds, are fully as large as can generally be had in connection with meritorious points. One peculiarity of this breed is the pea comb, which, being so small, is safe against the winter's frosts.

Light Bramahs, with us, are perhaps more generally bred throughout the entire country than any other breed, and yet there is always a very lively demand for good stock at satisfactory prices. They are often inclined to be long-legged; this must be guarded against by judicious selection. In mating, the cock and hens should not both have dark hackles, or the progeny will be very unsatisfactory. There is a prejudice in the minds of some that Light Brahmahs are delicate, on account of their plumage. This is entirely a mistake. They are altogether a most worthy breed, and invaluable to increase the size, laying and early maturity of a lot of "dung-hills."

Dark Brahmahs have nearly the same characteristics as the Light. They are, however, deeper and more compact in body, with shorter legs. They are like the Lights, well feathered down to the ends of the toes, but should be free from vulture-hock. They are very hard to breed to the "standard;" only four or five birds out of every hundred will be

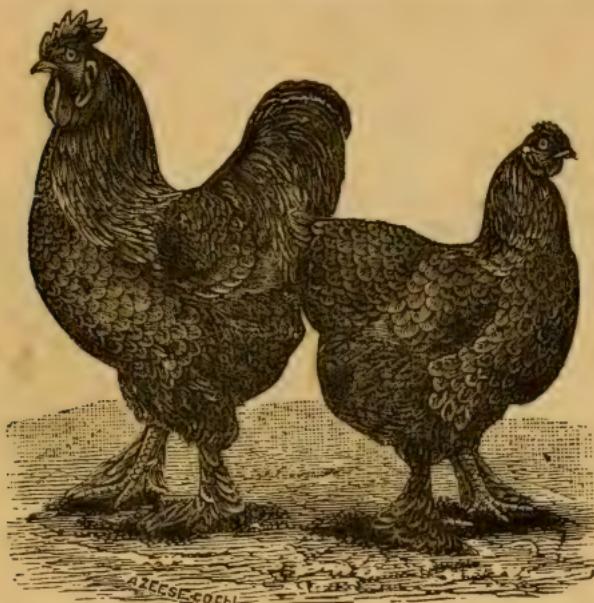


DARK BRAHMAS.

meritorious show birds, even from the best stock. But all the remaining birds are by no means worthless. Many of them are generally as good, and some even better, for breeding.

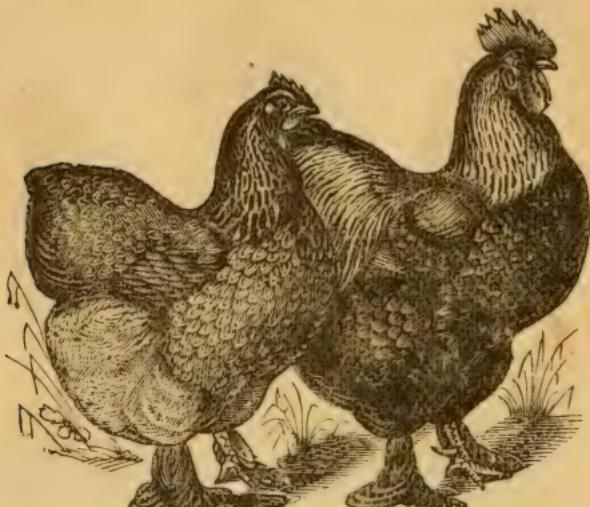
COCHINS.

Cochins are large, noble-looking fowls, with an abundance of loose, fluffy feathers, especially in the hens, thus making them the very best mothers. Mature cocks should weigh 10 to 13 pounds, and hens 8 to 10 pounds; small weights should not be tolerated, neither should extra heavy birds be bred, if, as is generally the case, they are correspondingly badly proportioned. The legs should be abundantly feathered to the toes, but not "vulture-hocked."



BUFF COCHINS.

They are very docile, can be picked up by a child, and are easily confined. They are rather poor foragers, and must be fed liberally. They are good winter layers. Their eggs are of various shades. They are very much inclined to sit, and hard to break. On account of their large size they are invaluable for crossing, whereby they can be improved in early maturity and flesh. They have single, erect combs, of fine texture. Recently a strain of Pea Comb Partridge Cochins has been introduced, and it is claimed for them the undoubted advantage for cold winters. We fear, however, that should this variety become popular, the distinct types of Brahmans and Cochins would be lost—



PARTRIDGE COCHINS.

merged into one common mixture. Cochins have so long been bred almost exclusively for large size and fashionable form and markings, that the economic qualities have been neglected. Much can be done in the way of improving their laying, etc. The varieties are the Buff, Partridge, Black and White Cochins. There is also a new breed, styled the Sebright Cochins, not yet recognized in the standard, nor will that name be allowed. Buff Cochins are fowls of unusual beauty. They should be one of clear buff color throughout, free from any white or colored feathers, or uneven shading. Partridge Cochins are very aristocratic, with the deep black breast and beautifully resplendent and varied plumage of the cock, and the exquisitely penciled hen. For small city yards a more pleasing

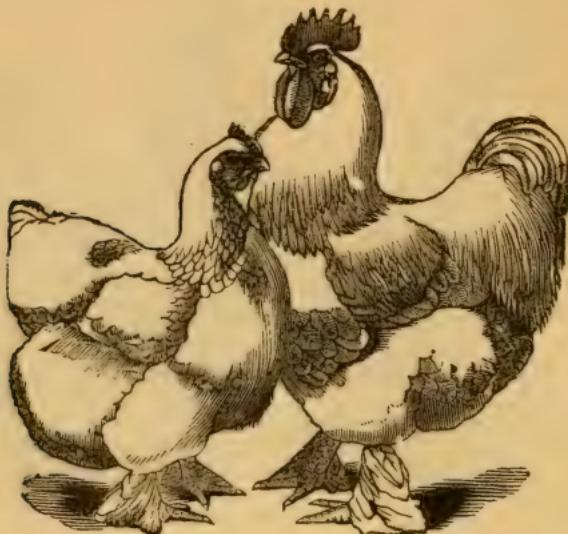


BLACK COCHINS.

breed could scarcely be desired. Black Cochins are only recently established, but are very beautiful and profitable. They cannot fail soon to take a prominent position among their fellows. White Cochins, being of a pure snowy whiteness throughout, do not present the difficulties to the young breeder which are sure to be experienced in raising the other varieties of Cochins, and hence are one of the best varieties to start with. All Cochins possess the same characteristics, and the amateur should select the variety best suited to his fancy.

LANGSHANS.

This new Asiatic breed has already attained considerable popularity. In color of plumage the Langshan are a rich metallic black, and resemble the Black Cochins, but are a distinct breed. They



WHITE COCHINS.

are round and deep in body, with breast broad, full, and carried well forward. They attain maturity early and grow to a large size; a cockerel of 7 or 8 months old, fattened, will weigh 10 pounds, and pullets, same age, 8 pounds. Their meat and skin are white, and they are an excellent table fowl; the meat being of a delicate flavor. They are *first-rate layers* and *not inveterate sitters*; they lay better than any other Asiatic.

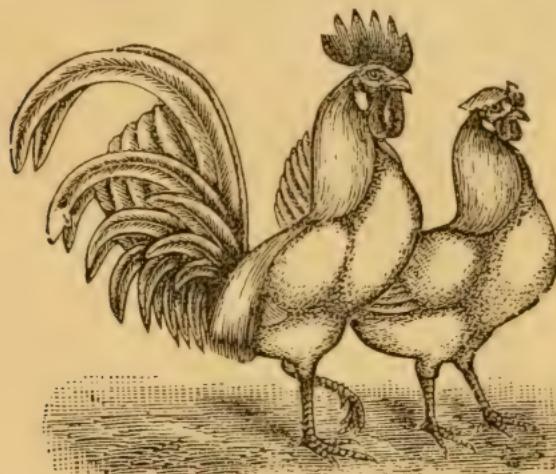
The laying qualities of the Langshans are certainly remarkable for so large a breed; none are better winter layers, and a few so good the year round, and when their large size and quick growth are taken into consideration, the Langshans must certainly be acknowledged a profitable breed. It

is not too much to say that they lay as well as the best laying strains of Plymouth Rocks. Being a *new breed*, they will command a more ready sale than the older varieties that are more generally disseminated; hence it will pay farmers and others to grow them, to sell surplus stock to neighbors. Their fine qualities, together with their handsome appearance, and fine, stylish carriage, cannot fail to make this breed prove eminently satisfactory.

LEGHORNS.

Of late years Leghorns have attained a wonderful, almost a miraculous popularity. And well deserve it, too. They are, without doubt, the best layers. They are non-sitters, although, as in all non-sitting varieties, a hen will take a notion towards incubation, and will often perform her unaccustomed duties very satisfactorily. Leghorns lay as many as 200 and 250 eggs per year. The pullets begin to lay at four and one-half and five months old. The cockerels will crow at seven weeks old, and a very amusing sight it is to see a large flock of chicks at this age. They very soon learn to run after the hens. From the very egg, almost before "their mother knows they are out," they are the liveliest of all chicks. They are splendid foragers, and after eight weeks old they generally pick up all their food among the wheat and stubble around the barn, etc. Their eggs are pure white, rather thin shell, and nearly transparent. They are not a large breed, but where eggs are desired, are all the more profitable on that account; *i. e.*, with less machinery

to feed, they will shell out larger results than any other breed. The cocks weigh $4\frac{1}{2}$ to 6 pounds, and the hens $3\frac{3}{4}$ to 4 pounds. They are very hardy and easily raised. For market, although not large, they are very presentable, with bright yellow legs and skin. They have high single combs, which, in this climate, are apt to get frozen in winter. This spoils



WHITE LEGHORNS.

their looks, but does not hurt their breeding qualities. No breed will so improve the laying qualities of barnyard fowls as pure Leghorns. A cross of a White Leghorn cock on Light Brahma hen makes excellent farm chickens, early maturing, good size, fine quality of flesh, and excellent layers.

White Leghorns were the first introduced, and are the most generally disseminated. They should be pure snowy white throughout, and entirely free from any colored feathers, or a shade of yellow.

Their ear lobes should be solid white or creamy white, and in this particular good strains breed remarkably true. Their comb should be of medium



BROWN LEGHORNS.

size, perfectly erect and evenly formed, deeply serrated, with five prominent points, wattles pendant, legs bright yellow, carriage proud and upright.

Brown Leghorns are of more recent introduction, but are already the most popular. They are very beautiful, resembling the Black Red Games in plumage, and from their fighting qualities we have reason to believe they contain some good blood.

In England this breed is becoming very popular, although as yet quite rare. They are pre-eminently an American breed. L. Wright, in his *English Book of Poultry*, says: "We consider them the

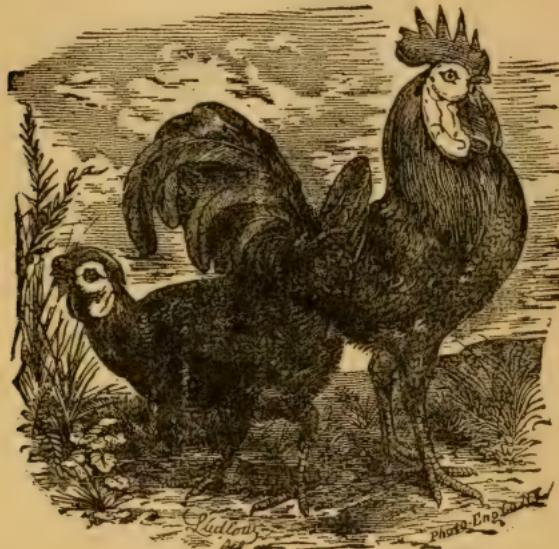
best layers we have ever met with." They have always been our favorites, and wherever introduced soon take the lead for eggs, on account of the immense quantity and admirable quality of the same. They have all the desirable qualities of this breed to a pre-eminent degree.

WYANDOTTES.

This new breed has so many good points to recommend them, both to the fancier and farmer, that they will surely become very popular. Their plumage is white, heavily laced with black, the tail alone being solid black; the lacing on the breast being peculiarly handsome. They have a small rose comb, close fitting; face and ear lobes bright red. Their legs are free from feathers, and are of a rich yellow color. In shape they bear more resemblance to the Dorkings than any other breed. Hens weigh six to seven pounds, and cocks seven to eight pounds each. They are very hardy, mature early, and are ready for market at any age. Their flesh is very fine flavored and coarse grained, which, with their yellow skin, model shape and fine, plump appearance, particularly adapts them for market. They are extraordinary layers, surprising every breeder at the quantity of eggs they produce. If allowed to sit they make most careful mothers, are content anywhere, and will not attempt to fly over a fence four feet high. Their great beauty and good qualities will make for them a host of friends wherever the breed is introduced.

BLACK SPANISH.

The White Face Black Spanish are one of the oldest pure breeds. They are everlasting layers of very large eggs, of excellent flavor. The yolk of the egg is not larger than of the ordinary egg, the white or albumen predominating. They are very

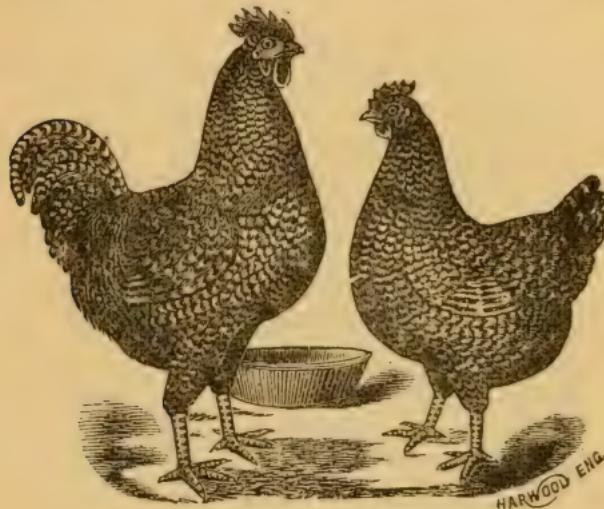


WHITE FACE BLACK SPANISH.

properly bred, the only danger being from their large, erect, single combs, which will become frozen in very severe weather. They are very high in body, with fine, stylish carriage. Their legs of a lead color, becoming lighter with age. Breeding in-and-in also produces pale legs, and then a cross should be made with a bluish-black legged cock of fresh blood. They are very poor table fowls, but their fine eggs entitle them to a high rank among the breeds of domestic poultry.

PLYMOUTH ROCKS.

Plymouth Rocks, for a "general purpose breed," are unsurpassed; desirable alike for eggs and early market chicks; while they neither lay as many eggs as the non-sitting breeds, nor attain the great size of the Asiatics, yet they most nearly com-



PLYMOUTH ROCKS.

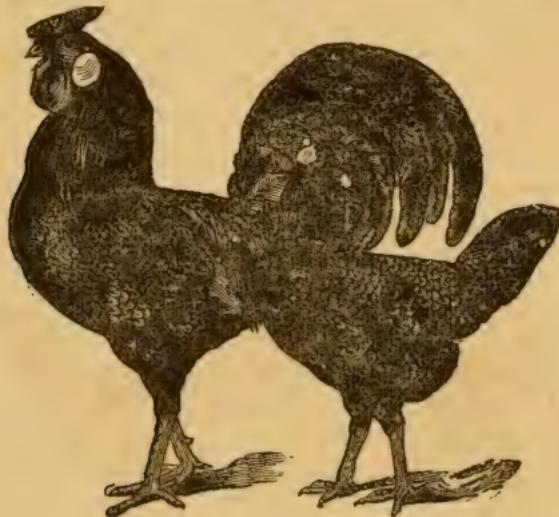
bine the excellencies of each of these classes of fowls, and where one breed alone is kept, it would be hard to make a more suitable selection. Their origin is generally believed to have been from a cross of the Black Javas and American Dominique. Certainly it is that they possess the good qualities of the latter with increased size. Their plumage is an even Dominique color throughout, the cockerels being several shades lighter than the pullets, and both having single combs. For exhibition it is

necessary that the cock and the hen should assimilate as nearly as possible in colors and markings. It is, however, disastrous to mate a dark cock with light hens for breeding, as some dark chicks will result from such a mating. Plymouth Rocks are first-class layers and good mothers, but not inveterate sitters. They probably lay more eggs than any other large breed that hatches and rears its own young. They are of large size and mature very early. For spring chickens, "this breed, as soon as it gets disseminated, will undoubtedly be one of the most profitable." They have bright yellow legs and are a first-rate table fowl. Their many good points can scarcely be over-estimated. They are a "general purpose" breed, and are the best farmer's fowl, take them all in all, yet produced. They are remarkably hardy and healthy, excellent foragers, and not high-flyers. The cocks weigh nine to eleven pounds, and hens seven to nine pounds. Their plain, Quaker-like attire is a suitable everyday work dress, and even farmers, who have an inherent dislike to fancy chickens, cannot but admit that the pure bred Plymouth Rocks are far ahead of any cross for farm stock. Every farmer will find a trio of the fowls a profitable investment, while fanciers will find no breed of fowls in so great a demand.

HAMBURGS.

Hamburgs are a very popular breed of non-sitting fowls. They are unrivaled in variety and beauty of plumage. All Hamburgs possess the same general characteristics. Stylish and active in car-

riage, slender, rather short, blue or slatey-blue legs, with deep red rose comb and close-fitting, pure white ear lobes. They require free range, and are then easily kept, as they are excellent foragers. They will lay upwards of 200 eggs in a year. While their eggs are not so large as those of the Leghorns,



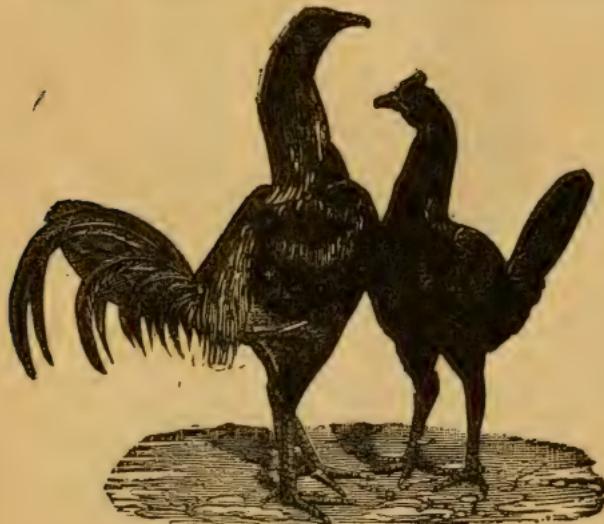
BLACK HAMBURGS.

yet, as long as eggs are sold by the dozen this makes little material difference in supplying the market. Mr. A. Beldon says of their early maturity, he has found that pullets of the penciled varieties lay at five months; the spangled not quite so early. The varieties of the Hamburgs are the Silver and Golden Penciled, the Spangled and the solid Black. The Black are the largest of all, and lay the largest eggs. They are also considered the most hardy. A great fault with many Black Hamburgs is a tend-

ency to white on the face. This should never be tolerated. The face must be one rich, deep red, like the wattles, contrasting strikingly with the pure white ear lobes. We have also seen fowls awarded a premium as Black Hamburgs that showed very plainly the carriage and form of the Black Spanish.

GAMES.

Games are generally familiar to every one, and are by many considered *the* fowls. Even those who



BLACK BREASTED RED GAMES.

rightly disapprove of the pit and its uses, admire a really *dead game* cock. No breed can equal them in true symmetry, elegance and style, with fearless expression. They are light feathered and all muscle. A game fowl will weigh much heavier than it appears. Cocks of good size will weigh six

and a half pounds, and hens five to five and a half pounds. Their flesh is unsurpassed, being the finest flavored of any breed of fowls. They are excellent layers of fine, rich eggs, much esteemed. The hens are the very best mothers, and will faithfully protect their young broods. They are easily reared,

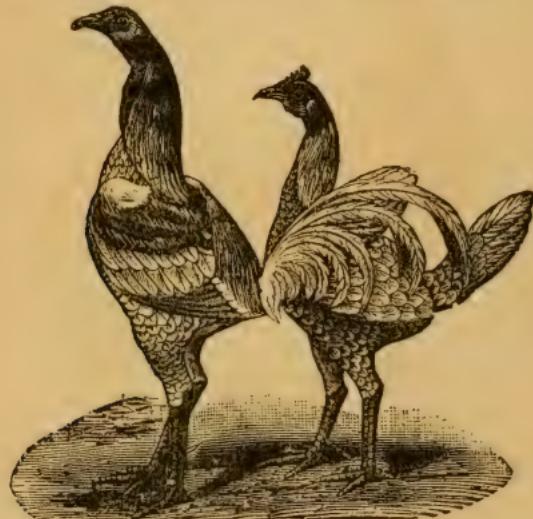


DUCKWING COCK.

and are undoubtedly a very profitable breed for economic purposes—the only drawback for domestic use being their fighting qualities. But these latter adding so to their beauty and elegance, besides the extra quality of their flesh, surely war-

rant a little extra trouble with the young stags.

When the young stags are troubiesome in fighting each other, they can be penned in small coops, arranged in tiers, and each one let out occasionally in a small yard, to exercise. There is always a lively demand for pure games of fine strains, at very satisfactory prices, and they are consequently one of the most profitable fancy breeds. The varieties of games are numerous; our limited space does not



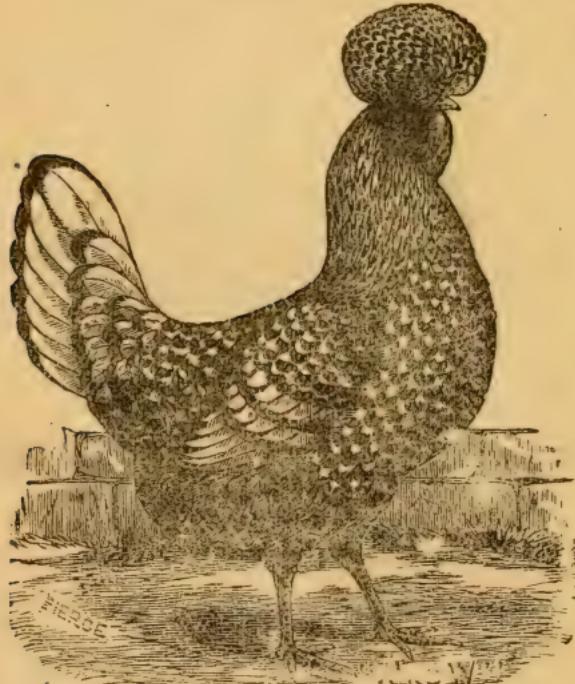
RED PILE GAMES.

permit a description of each. The most prominent are the Black Breasted Reds, Brown Breasted Reds, Duckwings, Derby, Piles, Sumatra, White and Henry games.

POLISH.

The Polish fowls belong to the non-sitting breeds and are excellent layers. Their flesh is very

fine, tender and juicy. They are reasonably hardy, if kept from wet and dampness, which they cannot stand. They bear confinement well, better than any others of the laying breeds, and can be bred successfully in very small quarters. They are very tame. As an ornamental fowl they are *ne plus ultra*, and combining, as they do, so many good qualities, are excellent for a gentleman's park, while for farm



SILVER POLISH HEN.

use they cannot equal the Leghorns. The varieties of Polish are, the White Crested Black, pure White,

Golden and Silver; the three latter being both plain and bearded.

For a gentleman's henery, where a plentiful supply of fresh, rich eggs is desired, we know no more ornamental or "striking" variety of fowls than the White Crested Black Polish. These fowls are entirely black in color, of a rich glossy shade excepting the crest, which is pure white, with only a few black feathers at the base in front. They are proud and stylish in carriage, and ever active, being



WHITE CRESTED BLACK POLISH.

peculiarly wide awake. Of late years they have become exceedingly popular, and we have even been surprised at the great demand for first-class stock and eggs; but we consider that they are the most attractive variety of a very beautiful and useful

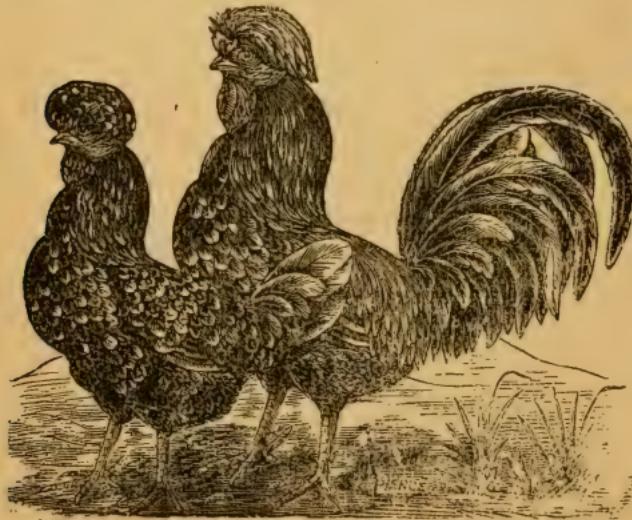
breed of fowls. As old breeders know, most Polish are subject to the vertigo, but we have never had a case of this among our White Crested Black Polish, they seeming to possess unusual vitality and strength of constitution.

DORKINGS.

The Dorking is held in high repute in England, and is well deserving of general cultivation by the farmers and fanciers of America. In perfecting this fowl, John Bull—true to his old-time reputation—has admirably catered to the tastes of an epicure. As a table fowl the Dorking is unsurpassed; affording an extra portion of very fine meat, remarkably abundant in the points most esteemed—the breast and wings are all of the very richest quality. They are a very heavy bodied fowl, well put up, with long, broad back, and close feathered. Altogether, they are one of the very best breeds for the “general purpose” of both table fowls and eggs. The varieties are the Pure White, the Silver Gray and the Colored Dorkings, the latter not being bred to any special standard of color. The Silver Grays embrace two varieties, the Rose Combed and the Single Comb, the latter being the most generally bred. They are so handsome that they have many admirers. The White Dorkings, as their name indicates, are spotless white in plumage, contrasting nicely on a green sward. The Whites must all possess rose combs, square in front, firm and close-fitting, terminating in a point behind. All pure Dorkings should have a supernumerary fifth toe. We will conclude with the fol-

lowing remarks from the pen of a well-known English breeder :—

" This good old-fashioned breed is so well known, and every where so appreciated, that we need say but little about it. They have one fault, however, which detracts from their value, viz.: that they will not thrive well where ducks are largely kept, whether from the fact that the damp soil which suits ducks is prejudicial to their health, or from other unexplained reasons. We have, ourselves, certainly proved that ducks are ' death ' to Dorklings, and are compelled to keep them away from ground which is tainted by waterfowl. They lay a large white egg, are great favorites for table purposes, owing to white meaty breasts and the whiteness of their flesh."



HOUDANS.

Houdans, with their fine, well-formed bodies, covered with a beautiful plumage of black and white intermixed, pinky legs, and their head almost hidden by the large crest, muffs and beards, and triple antler-like comb, and supernumerary toe, cannot fail to attract attention everywhere. They are the best and most hardy of any of the French breeds, and are a fine farmer's fowl. They also bear confinement well and are easily reared. As a table fowl they are well entitled to the cognomen of "The French Dorking." They are excellent layers of fine eggs of large size. The cocks are very vigorous, and can serve a large number of hens. The chickens usually hatch some hours before their time, and it is a rare occurrence to find an unfertilized egg. They are non-sitters. Houdans make excellent crosses on common fowls or on Asiatics.

LaFleche and Crevecoeurs are also French breeds of poultry bred to a small extent in this country, but on account of their delicate constitution are not valued for farmer's use. All the French breeds, it is believed, originated from a cross of the Polish and Crevecoeurs, and are, in fact, a Polish fowl, to all intent and purposes, but increased in size; the same ancestry is shown by the delicate constitution which characterizes nearly all the varieties.

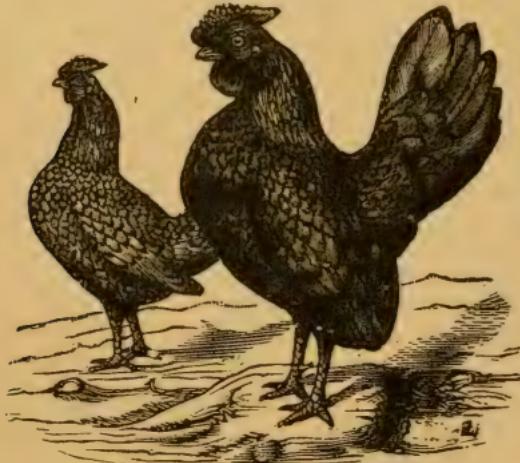
AMERICAN DOMINIQUES.

These fowls are like the Plymouth Rocks in plumage and bright yellow legs. But unlike the Plymouth Rocks they are an old established variety

and breed very true to color; the cocks, however, are lighter colored than the hens. They have neat rose combs, are excellent table fowls, good layers, free breeders, very hardy, and one of the most valuable breeds for the general farmer. They are not quite as large as the Plymouth Rocks.

BANTAMS.

There are several distinct breeds of Bantams; the Game, Silver, and Golden Sebright and Black African, being the most important. All are cultivated almost solely as pets, and hence it is not in our province to speak of them here. Bantams can, however, be bred in so small a yard (five or six feet square) that they can be kept by many who have no better facilities. They also will produce as many eggs, although of small size, as larger fowls. Noth-



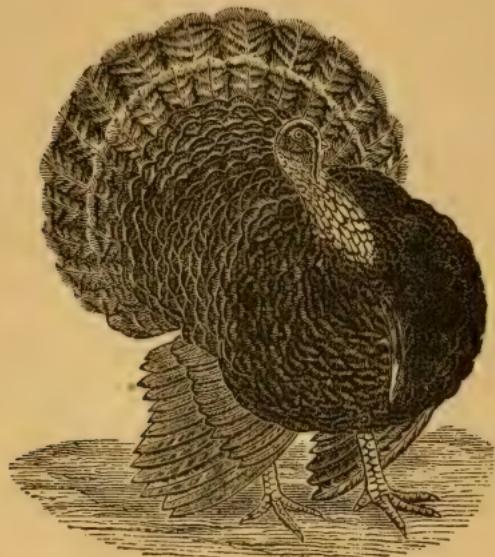
SEBRIGHT BANTAMS.

ing can exceed their eggs in delicacy of flavor

Small Bantams can be run in the same yard with large Asiastics or Plymouth Rocks, without danger of mixing.

TURKEYS.

The varieties of turkeys are the mammoth Bronze, White Holland, Black, Slate and Buff Turkeys. The Bronez Turkeys are generally considered the largest. Adult gobblers will weigh 40 and 45 pounds each, hens 15 to 20. Young turkey gobblers, at eight months old, will weigh from 20 to 25 pounds each, and hens from 12 to 15 pounds. These are fair average weights. They will gain about one pound in two weeks. But occasionally, and also when birds are especially well fed, they will exceed these weights. For breeding stock, however, it is not well to force them too much. Further north, where the snow is on the ground for a longer period, and where, consequently, the turkeys are fed more corn, they will weigh heavier. The new American standard only recognizes the light-tipped turkeys, while the dark bronze are really the more beautiful, and by many breeders preferred. Both colors can be bred from the same stock if they are so mated, but some of this off-spring will be of a mixed bronze plumage. The silver-tips, however, are generally purer bred. The dark bronze will often throw buff or cinnamon birds, showing that they have been crossed with that variety to secure the desired color. Pure Turkeys are believed to have originated from a cross of the wild turkey and the gray Narragansett.



BRONZE TURKEYS.

The White Holland Turkeys are a very handsome and showy variety. The rich red beads and the glossy black beard of the male, contrasting beautifully with a plumage of snowy whiteness. For a lawn, a finer or more aristocratic ornament could not be desired. They are not only "a thing of beauty," but are also a very valuable breed. They are very much larger than the common white turkey, and also unlike them, very hardy. Their flesh is much esteemed as of a superior delicacy. They are especially valued on account of their superior laying qualities and early mating. While their eggs are not quite as large as the Bronze, they are produced more abundantly.

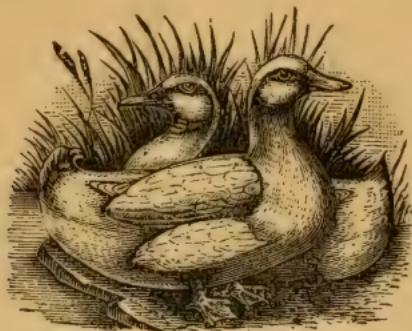
Black turkeys are distinguished by an intense deep black color throughout, and are of large size.

Blue turkeys, sometimes called Slate turkeys, should be of an even slatey color throughout. The best stock of this breed was imported from France. They are much esteemed on account of their prolificacy, early maturity, large size, and rich flavor of their flesh; being, in many cases, fully equal in size to the Bronze. This breed is well worthy of more general cultivation.

Buff turkeys are, as their name indicates, of a pure buff color throughout. They are comparatively but little bred. In no stock is the importance of a good male so fully evinced, and every farmer should, each year or two, as already hinted, procure a good thoroughbred gobbler, of either the Bronze, White Holland or Blue varieties.

PEKIN DUCKS.

The duck of the period, and the coming duck. Although of recent introduction into this country, they have become remarkably popular in a very few years. They have already gained the preference over the other varieties. They are in constant demand, which proves their real merit. The plumage of the Pekin Duck is of a creamy-white, and they have yellow bills and orange legs. They are very ornamental, so much so that they are kept in some of our public parks. Their average weight is from 14 to 16 pounds per pair. They, like all Asiatic fowls, appear decidedly larger than any other variety of the duck family on account of their loose



PEKIN DUCKS.

fluffy feathers, but sometimes they are equaled in weight by the very best Rouens. They are also highly esteemed for their early maturity, hardiness, flesh and eggs. They are the very best laying ducks known; a single duck has been known to lay 150 eggs per year. They are easily confined, and require no more water than chickens.

AYLESBURY DUCKS.

They are deservedly popular on account of their prolific qualities, size and early maturity. They are of a spotless white, with flesh colored bills and bright orange colored legs. They lay large and well flavored eggs in abundance, between the months of March and June. They are an excellent table fowl, their flesh being beautifully white, and always commanding a high price in the market.



AYLESBURY DUCKS.

EMBDDEM GEESE.

The Embdem Geese appear first, so far as at present known, in Holland, although they receive their name from a town in Germany. They were first imported into America in 1821, having been shipped from Bremen, for which reason, doubtless, they are sometimes called the Bremen. The Embdem goose is pure white, the legs, feet and bill being yellow, the eye of a peculiar blue. In shape, they have some advantage over their rivals, the Toulose in the absence of the depending belly, which

is, in some eyes a deformity. This variety of geese reaches nearly, if not quite as large size as any other. The light feathers of the Embden variety make them more popular with some, since these bring a better price in market. The flesh is spoken of with great praise as being less dry than that of the common goose; the breed is of a quiet disposition, and therefore grows rapidly. The Embden is an early layer, and under proper circumstances often produces two broods a year. Whoever will keep them will find them profitable, while their beautiful, snow-white plumage makes the flock an ornament to the poultry yard.

AFRICAN, OR HONG KONG GESE.

They are a very ornamental breed. They are as hardy and as easily reared as any other geese. In color they are of a grayish brown, with a brown stripe down the back of the neck. They have black bills and dusky orange-colored legs. A marked peculiarity is a black protuberance or knob at the base of the upper bill. They mature early and are a good table fowl. They are decidedly the best layers of a goose family, laying 25 or 30 eggs before showing any inclination to sit, and will lay three or four litters in a season, while other varieties rarely lay over 15 eggs. They commence laying in February if the weather is mild, and again in September.

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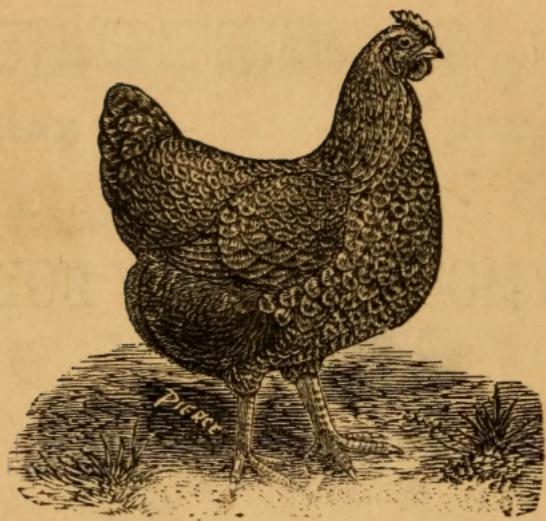
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